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# An Examination of Friendship in Middle Childhood: A Test of the Similarity-Attraction Hypothesis

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# AN EXAMINATION OF FRIENDSHIP IN MIDDLE CHILDHOOD: A TEST OF THE SIMILARITY-ATTRACTION HYPOTHESIS

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AN EXAMINATION OF FRIENDSHIP IN MIDDLE CHILDHOOD:

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The purpose of this study was to examine the similarities between children and their friends. Previous research had focused on demographic similarities, with a little attention given to behavioral similarities. This study sought to expand the knowledge of similarities between friends to sociometric and social information processing characteristics and show that friends were more similar than random pairs of children. Children completed a rating and nomination sociometric interview. Children also completed a social information processing interview in which they viewed ambiguous provocation situations and then rated a series of social goals and gave social problem solving responses. Two-hundred and twenty-four pairs of reciprocated friends and 224 random pairs of children were identified and used for analyses. Correlational analyses and regression analyses were used to assess similarities. Results showed that friend pairs were similar for prosocial, hostile/instrumental, and passive/avoidant goals, however, regression analyses indicated that friends' characteristics were significant predictors of only some prosocial and hostile/instrumental goals. Friend pairs also were similar in the passivity/assertiveness of their social problem solving responses. Thus, the current study shows some support for the hypothesis that children and their friends are similar in their social processing mechanisms. Further research should be conducted to determine

whether small sample size and small standard deviations made the detection of effects more difficult.

# CHAPTER 1

## Introduction

### *Friendship*

Considerable research in the area of social development has centered on the benefits and dynamics of friendships during middle childhood. Theorists and researchers have explored the impact that these early relationships can have on development. Piaget's (1965) work on the children's social and moral development focused on the egocentric viewpoint of children and how it can be lessened through cooperation with friends. As children learn to cooperate with others, they understand that there are opinions and perspectives on the world other than their own. Sullivan (1953) also described the importance of friends during what he called the juvenile era, which started when children began formal education. He believed that friendships were the mechanism through which children learned how to socialize and get along with others. Friendship also provided the environment from which children learned competition and cooperation with peers. Children's "chums," as Sullivan called friends, were the first instances in which equality was an important factor in the relationship, and these equal relationships laid the foundation for later intimate relationships. Extensive observational research reported by Parker and Gottman (1989) was the basis of a theory of how friendship contributes to socioemotional development from preschool through adolescence. For example, during middle childhood, friendships enable children to share and understand information, explore similarities between each other, and understand social norms. The

research conducted on friendships has demonstrated that friends contribute to social development in a number of ways, and the conclusion is that it is a great benefit to have friends.

To examine friendships, it has been necessary to create measures that are understandable and valid for children ranging from preschool age through adolescence. Sociometric rating and nomination techniques have been devised and validated as adequate measures of peer acceptance and friendship for all ranges of children's ages (Asher & Hymel, 1981). The wide use of these two constructs has caused researchers to emphasize the importance and difference between acceptance and friendship. Peer acceptance refers to how a child is viewed by his or her peers, regardless of how the child views these peers. Friendship, on the other hand, necessitates reciprocation and involvement from both individuals in the dyad. The distinction between these two constructs must be maintained in research through the use of distinct methods of measurement (Asher, Parker, & Walker, 1996). Acceptance can be derived from a rating method in which children rate each classmate individually on how much they like to play with them. A nomination method serves as a measure of friendship as children nominate those they like the best, and reciprocated nominations define a friendship dyad (Hartup & Stevens, 1999). The nomination method can also be adapted to include questions to assess behavioral characteristics, including shyness, aggression, and social competence. These measures of acceptance, friendship, and behavioral characteristics are important tools in understanding children's social development and adjustment.

The school environment can provide a multitude of opportunities for new experiences during childhood. It is an ideal location for children to meet and develop

new relationships as their social development advances. For example, a study by Parker and Asher (1993) found that 77% of their sample of third through fifth graders had at least one friend in their class. There is also high stability in friendships examined over time, with studies reporting stability rates of 61% over 2 months (Ladd, Kochenderfer, & Coleman, 1996) and 69% over 6 months (Berndt, Hawkins, & Hoyle, 1986).

As theorists have argued for the importance of friendships, research continues to uncover support for this idea. Attention has focused on the benefits of having friends, including the possible impacts on school adjustment and performance. Ladd (1990) reported that having friends in one's class predicted positive perceptions of school during the first few months of kindergarten, and that these perceptions were consistent throughout the year for those children who maintained their friendships. Children with at least one friend have also been found to have higher achievement test scores than do friendless children (Diehl, Lemerise, Caverly, Ramsay, & Roberts, 1998). This research demonstrates that having friends can have a positive impact on children's perceptions of school and subsequent academic success.

Research examining differences between children of varying acceptance levels has shown that how one is viewed by peers can impact social development. Much research has been done to see whether low-accepted children are at a developmental disadvantage compared to other children. It has been shown that a lower percentage of low-accepted children have at least one friend than average- or high-accepted children, and low-accepted children report having an overall poorer perception of the quality of their friendships than do either average- or high-accepted children (Parker & Asher, 1993). Even though being poorly accepted in the classroom can impact whether children

have friends as well as the quality of those friendships, it is important to note that not all low-accepted children are friendless.

### *Similarity-Attraction Hypothesis*

Researchers have explored friendships in middle childhood to understand the factors that may contribute to two children becoming friends. One theory that has received much attention is the similarity-attraction hypothesis. This theory states that people are attracted to others with similar characteristics (Byrne & Griffitt, 1973). Early research focused on attraction between adults, but the focus has moved to include attraction between children and their friends. Similarities are an important part of friendship to study because they can provide information on why children choose the friends they do. Knowing characteristics on which children are similar can also direct attention to programs aimed at improving social relationships. Children with social maladjustments may very well have friends who show the same behaviors. Addressing similarities between friends would help us understand how friendships are formed as well as understand how friends' characteristics may influence children's social development.

There is considerable evidence demonstrating that children typically have friends who are similar in age, race, sex, and gender (Clark & Drewry, 1985; Hallinan & Smith, 1985). Graham, Cohen, Zbikowski, and Sercrist (1998) studied children in first, second, and third grade and found that three years later the number of same-sex/same-race friends had increased, indicating that similar characteristics may become more important as children get older. There have also been examinations of whether friends share other similarities beyond physical characteristics, such as behavioral, social, and cognitive similarities. Children show higher behavioral similarities with friends than non-friends

for prosocial (e.g., cooperating, helping) and antisocial (e.g., fights, disruptive) behaviors (Haselager, Hartup, van Lieshout, & Riksen-Walraven, 1998; Poulin et al, 1997). Even recently acquainted children show behavioral similarities with children they especially like, as shown by children having longer durations of parallel play behaviors that are similar to those of preferred peers compared to those of non-preferred peers (Rubin, Lynch, Coplan, Rose-Krasnor, & Booth, 1994). Social characteristics, such as attitudes and personality constructs, have also been found to be more similar between reciprocated friends than between non-reciprocated friends; in particular, boys and their friends share similar attitudes, while girls and their friends share similar ratings for personality constructs (Erwin, 1985).

If children do prefer friends who share similar characteristics, there is some evidence to suggest that antisocial behaviors may be more salient selection criteria than prosocial behaviors. Cairns, Cairns, Neckerman, Gest, and Gariépy (1988) found a significant correlation between reciprocated friendships of boys on aggression, while the correlation between nonreciprocated friendships was not significant. In a study using direct observation of boys' play groups, Poulin et al. (1997) found higher similarity between friends for proactive aggressive behaviors than for prosocial behaviors. Poulin and colleagues asserted that children may see prosociality as a good characteristic for a friend, even if they do not endorse prosocial behaviors themselves. Aggression is a more salient characteristic that not all children would like to see their friends have, thus it may explain more individual differences in friendship selection.

Similarities between friends are not only observed by outside parties but also children themselves report seeing similarities. Ladd and Emerson (1984) were interested

in measuring whether children were aware of the amount of information and number of characteristics they shared with their friends. Mutual friend pairs were designated by children's reciprocated nominations for best friend, and these reciprocated nominations were also confirmed by teachers and parents; unilateral friend pairs were designated by unreciprocated nominations, in which only one child nominated the other, and these were confirmed by teachers and parents. During separate interviews, children were asked to select from a list of 70 characteristics those that described themselves, and in the second interview they selected characteristics that described their mutual and unilateral friends. Self-referenced shared knowledge (SRSK) consisted of the number of times both children in the pair chose the characteristic for themselves as well as their friend.

Results showed that mutual friends were more likely to choose the same characteristics for themselves than were unilateral friends, demonstrating that reciprocated friends have a higher degree of similarity between them. Moreover, mutual friends had higher levels of SRSK than did unilateral friends, indicating that mutual friends were more likely to choose the same characteristics for themselves and their friends. This study showed that children are aware of the characteristics they share with their friends, which indicates that children may search for friends who are similar to them (Ladd & Emerson, 1984). One of the limitations to this study was that all children selected descriptive characteristics for themselves first and then selected characteristics for their friends. The order of these sessions should have been counterbalanced across the pairs of friends in order to test whether asking children to describe themselves first influences the results for the friend condition.

Erwin (1985) also found an imbalance in amounts of similarities between reciprocated friend pairs and nominal friend pairs, which were pairs of children in which neither child nominated the other. Children in two separate classes, a younger class with a mean age of 7 years 9 months and an older class with a mean age of 9 years and 4 months, completed construct rating scales in which they rated how important it would be for their friends to have individual personality characteristics, such as "shares things" and "not bossy." Children's personal attitudes were also assessed with an attitude scale. In the younger class, reciprocated friends had higher levels of similarity than nominal friend pairs for attitudes and for the personality constructs they viewed as important for friends to have. No significant differences were found in the older class groups of reciprocated and nominal friend pairs. One possibility for the differences in findings between the younger and older classes was that different construct scales were used for each group. The authors tried to justify the use of separate scales since children of varying ages may place different levels of importance on different characteristics. The lack of significant findings between reciprocated and nominal friend pairs in the older class may not be due to both groups showing the same level of similarity, but rather that the construct rating scale used was faulty. If the construct rating scale used for the younger children had been used by both classes, then reciprocated friends in the older class may have shown a higher degree of similarity than nominal friend pairs.

The research on similarities between children and friends has been conducted in many areas, covering demographic, behavioral, and personality construct similarities between friend pairs. While there have been methodological limitations with some of the research, it all points to the same conclusion: children and their friends share a variety of

characteristics, which may be an indicator that children prefer friends with whom they share similarities. However, there is still research that can be conducted to examine similarities between children and their friends in order to help understand children's social development. Research in the area of social information processing has been successful in explaining individual differences in children's social development, but little research has focused on examining social information processing similarities between friends. It has been found that how children interpret and respond to situations can be an indicator of behavioral dispositions and development deficits. Since friends play an important role in development, it is important to examine whether they share similarities in how they process information. Similarities in social information processing may be the mechanism behind the behavioral similarities reported for friends. Research on this issue can further both the understanding of social information processing and friendship and encourage research focusing on how friends may impact social information processing characteristics.

### *Social Information Processing*

For over two decades, developmental research has looked at the impact of social cognitive factors on peer relations and social competence. There has been a considerable body of research focusing on the factors that contribute to social adjustment and social maladjustment. One model that has been used to explore the contribution of social-cognitive factors to children's social competence is the social information processing model (Crick & Dodge, 1994; Dodge, 1986). In the most recent version of this model, Crick and Dodge outline the information processing steps that children go through in interpreting and reacting to social situations. This model incorporates a database of

knowledge and experiences that the child brings to the situation. Past experiences and knowledge within this database can be used as the child processes the information for the current situation, and new information that the child generates or gains from the current situation can also be stored in the database. At Step 1, cues from the situation are encoded and then interpreted at Step 2. Interpretations of the cues can include attributions of both cause and intent as well as evaluative processes about the self and others or evaluating outcomes from previous situations. At these steps, the child comes to understand the situation. During Step 3, the child concentrates on choosing goals or outcomes that would be possible for the situation. It is at Step 4 the child retrieves possible responses to the situation or may develop new responses. At Step 5 the generated responses are evaluated in terms of their potential to achieve the desired outcome. These responses can be evaluated on how well they can meet expectations, whether they are appropriate, and also on whether the response meets the child's abilities and self-efficacy. Based on these evaluations, a response is selected, and at Step 6 the child performs the behavioral response.

Much of the research on this model has examined whether socially maladjusted children have deficiencies or biases at one or multiple steps that differ from the information processing of more well-adjusted children (see Crick & Dodge, 1994 for review). The area that has probably received the most attention is how children interpret situations and the attributions made about the situation and other peers involved. There is considerable evidence demonstrating that aggressive children are more likely than non-aggressive children to attribute hostile intent in a situation when the intent of the peer is ambiguous (Crick & Dodge, 1996; Dodge, 1980; Dodge & Somberg, 1987). However,

aggressive and non-aggressive groups of children do not differ in interpretations of prosocial and hostile cues (Dodge & Somberg, 1987). These differences between aggressive and non-aggressive children in the processing of social cues may subsequently influence the behaviors children choose to enact. An aggressive child in the peer group is also more likely to be viewed as displaying hostile intent and is predicted to use hostile behaviors more than non-aggressive peers (Dodge, 1980). According to the model, the responses and behaviors chosen will match the intent ascribed to the situation. Thus, as aggressive children are more prone to a hostile attributional bias and are viewed as having hostile intentions, they are more likely to choose and enact aggressive responses. Discovering differences between adjusted and maladjusted children in social information processing enables researchers to determine the factors that contribute to social adjustment in the peer group.

Attention also has been paid as to how well the individual steps in the social information processing model predict subsequent steps and overall behaviors. Dodge and Price (1994) measured children's processing at the individual steps and, using regression analyses, examined whether each step would make a unique contribution to predicting children's behavioral responses. While the results for different types of social situations (e.g., group entry, provocation, and authority) were mixed, overall, encoding of cues, response generation, and response evaluation significantly incremented the prediction of behaviors. When all steps and variables were combined, the cumulative processing of social information significantly predicted behavioral responses. This model provides a useful tool for determining cognitive processing deficiencies and biases that can affect social development in children.

While it is a useful tool, the model also has limitations. Crick and Dodge (1994) stated that the role of emotion has been neglected in social information processing research. Suggestions were even made about how emotion can be incorporated into each step of the model, but emotion was not included in the final model. In response to this problem, Lemerise and Arsenio (2000) demonstrated how emotion processes can play a role in each step of Crick and Dodge's (1994) model. When a child encodes and interprets the cues of the situation at Steps 1 and 2, Lemerise and Arsenio propose that the child not only has to consider their own emotions but also the emotion cues of the other peer. As the child proceeds to Step 3 and considers possible social goals for the situation, the child's mood may encourage the adoption of goals that match the mood (e.g., instrumental goals when angry). When examining goals for the situation, the child takes into account the emotions that he/she has already encoded and interpreted. As the child reflects on which responses are adequate at Step 4 and evaluates the responses with the desired goals at Step 5, the emotions of the situation that have been encoded and interpreted as well as memories of emotions from past experiences can play a role in the decision process. Lemerise and Arsenio also suggest that the peer's emotions can affect which responses the child believes are appropriate as well as which ones he/she is capable of handling at the time. In the last step of the model, acting out the chosen behavior also depends on how well the child is able to display the desired emotions. As the situation progresses, emotions from both the child and peer provide feedback on how well the experience has been handled. Little research has been conducted on this integrative model of social information processing proposed by Lemerise and Arsenio (2000). One purpose of the current study is to examine whether children and their friends

will react similarly to affective cue manipulations during ambiguous provocation situations.

### *Social Goals*

Much attention has been given to the interpretations and attributions of intent and the differences adjusted and maladjusted children show in these areas of social information processing. In comparison, the social goals children adopt have not received as much attention. Crick and Dodge (1994) define social goals as "focused arousal states that function as orientations toward producing (or wanting to produce) particular outcomes" (p. 87). The goals adopted for a particular situation can aid in generating behavioral responses that will optimize achieving the desired goal. For example, a child with the goal of wanting to maintain a friendship with a peer may respond in a prosocial manner in order to keep the relationship going.

It has been suggested that examining differences in social goal preferences of adjusted and maladjusted children may provide additional insight into cognitive biases that can lead to behavior problems (Erdley & Asher, 1999). For example, aggressive children are more prone to choose hostile goals than are prosocial or withdrawn children, regardless of whether they attribute hostile or benign intent (Erdley & Asher, 1996); thus the indication is that social goals may offer a better prediction of behavioral responses than intent attributions. However, it may depend on the type of aggression children use. Crick and Dodge (1996) compared the social information processing mechanisms of proactively aggressive and reactively aggressive children. Proactive aggression is used as a means to achieve an end goal, while reactive aggression is used as a defense to a provocation. The results indicated that proactively aggressive children chose

instrumental goals significantly more often than relational goals when compared to non-proactively aggressive children. The tendency for aggressive children to adopt more hostile or instrumental goals could explain further their aggressive behavioral responses.

As researchers continue to explore the importance of social information processing in social adjustment, an area that needs to be addressed is whether children and their friends share similar social cognitions. The similarity-attraction hypothesis states that friends are attracted to one another based on the similarities that are shared (e.g., gender, race, age), but very little research has examined whether children and their friends adopt similar processing patterns. Brendgen, Bowen, Rondeau, and Vitaro (1999) examined the impact of friend's characteristics on children's interpretations of intent and behavioral responses to ambiguous provocation stimuli. Peer nominations were used to assess children's aggressiveness (e.g., fights) and prosociality (e.g., shares). Scores for aggression and prosociality were created by adding the number of nominations for each category and standardizing them within the class. Children also nominated up to three classmates they liked the best, and reciprocated nominations between two children were used to define a friendship dyad. Friends' aggression and prosociality scores were created in the same manner described above. Results showed that when predicting the frequency of aggressive responses to hypothetical situations, friends' aggression scores significantly incremented the prediction while friends' prosocial scores did not. A significant interaction was also found between age and friends' aggressiveness, indicating that friends' aggressiveness predicted aggressive responses for older but not younger children. When predicting prosocial/pacifistic responses, children's aggression scores added a significant increment, but only if the children had prosocial friends. In other

words, prosocial/pacifistic solutions were generated more frequently by children who were rated low in aggression and had prosocial friends. What this study demonstrates is that friends' characteristics may be related to children's own processing of social information and that this relationship could be stronger for older than younger children. The purpose of the current study was to extend the research in this area to explore whether children and their friends share similarities in the social goals and social problem solving responses assessed in the context of hypothetical ambiguous provocation situations.

### *Hypotheses*

The research reviewed indicates that there are patterns of similarities between children and their friends, but less is known about whether these similarities would extend to the area of social information processing. Children's rated levels of importance for social goals will be assessed in the context of hypothetical ambiguous provocation situations. It was hypothesized that for the six goals used, two prosocial, two passive/avoidant, and two hostile/instrumental, reciprocated friend pairs would be more similar in their importance ratings of each of the goals than would randomly paired children. Children's social problem solving responses were also examined for similarities. It was hypothesized that reciprocated friend pairs would have more similar levels of hostility/friendliness and passivity/assertiveness in their social problem solving responses than would randomly paired children. Data from Brendgen et al. (1999) support the hypothesis that the similarities between friends would be stronger for older than younger children.

The reformulated social information processing model by Lemerise and Arsenio (2000) incorporates emotion processes that can impact children's cognitive processing at each step of the model. Another focus of this study was to manipulate the affective cues displayed by provocateurs in the hypothetical ambiguous situations to see whether children would have different levels of importance for social goals when the provocateurs were happy, angry, and sad. It was hypothesized that reciprocated friend pairs would be more similar than randomly paired children in their importance ratings of the six social goals for each affective cue. It was also hypothesized that reciprocated friend pairs would be more similar in the hostility/friendliness and passivity/assertiveness of their social problem solving responses for each affective cue than would randomly paired children. Again, these similarities were hypothesized to be stronger for older than younger children.

# CHAPTER 2

## Method

### *Participants*

Participants were first, third, and fifth grade students attending schools from two districts in a southeastern city. Permission slips were distributed to all children who had been in the class for at least 2 months, to ensure that the children knew each other. To encourage return of the permission slips, children were given a small token of appreciation, regardless of whether permission to participate was granted. Only those children who received permission were interviewed. Only classrooms with at least a 70% participation rate were interviewed in order to ensure validity of the measures. The overall participation rate for the large sample (N = 402) was 81%.

From this larger sample, 224 same-gender reciprocated friend dyads and 224 same-gender random dyads were identified (see Measures and Procedures below). For the friend pair and random pair samples, 44% of the dyads were female. Racial composition of the two samples were as follows: reciprocated friend pairs were 83% Caucasian, 11% African American, and 6% other races; random pairs were 81% Caucasian, 13% African American, and 6% other races.

### *Measures and Procedures*

#### *Session 1: Sociometric Interview*

The purpose of this interview was to measure peer acceptance, identify dyadic friendships, and assess behavioral characteristics of aggression, shyness, and getting

along with others. Administration of the interview was done individually for first graders and as a group for third and fifth graders, but all measures were the same. For the group interview, a primary experimenter led the interview with other trained assistants present to answer questions and ensure children worked independently.

Children were told that this study had a series of questions about their classmates, and they were encouraged to answer each question honestly. To ensure their honesty, children were assured that their answers would be kept confidential, and they were asked to do the same, so that the feelings of their classmates would not get hurt. Children were then introduced to the 5-point rating scale used for this study. This scale was a graph of bars that increased in height, with faces over the bars ranging from sad to neutral to happy. Children were told that the bars represented how much they like someone or something, with 1 indicating "the least" and 5 indicating "the most." Each bar of the scale was explained, and comprehension of the scale was tested by asking children to indicate foods liked least and most on the rating scale.

At this point, verbal and written assent from the children was obtained. Children were told that they could ask questions at any time, that there were no right or wrong answers, and that they had the right to not answer questions and to quit at any time. Verbal assent was obtained from all children while written assent was additionally obtained from children 8 years and older.

During the first part of the interview, children rated each of their classmates on the rating scale on how much they liked to play and work with them. For the individual interview, the names of all the classmates were printed on 1" x 4" cards. These cards were fanned out, and the child picked one at a time, told the experimenter who it was, and

indicated on the scale how much they liked to play and work with that person. The experimenter recorded all answers for the individual interviews. Children in the group interview were provided with a list of names of all the children in the class, with the numbers one through five to the right of the names. Children were told that the numbers following each name corresponded to the numbers on the scale. As they worked independently, children rated each of their classmates on the scale by circling the number that indicated how much they liked to play and work with them.

The second part of the interview was a series of nominations for which the children chose up to three children from their class for each question. Children nominated classmates for "like best," "fights, say mean things, pushes and shoves others," "shy," and "gets along well with others." For the individual interview, all the name cards were placed in front of the child, and they were asked to say or point to the children they nominated for each question. The experimenter recorded all answers. For the group interview, children looked at their list of classmates and indicated the classmates they nominated for each question on another sheet. Children wrote down the identification numbers of the classmates printed to the left of each name rather than their names to ensure confidentiality.

Finally, children were asked to say what they wanted to be when they grew up. This question was intended to divert their attention away from the sociometric procedure.

*Session 2: Social Information Processing Interview*

The purpose of this interview was to assess the importance that children place on a series of social goals in response to ambiguous provocation situations. Conducted individually on a different day than Session 1 by a trained experimenter who was blind to

the results from the sociometric interview, this interview began with an introduction outlining that the purpose of the study was to find out what children think about things that happen to other children. Confidentiality and participant rights were also discussed.

Children viewed seven video stories involving two children who were engaged in hypothetical ambiguous provocation situations; the first story was used for practice and the other six for data collection. In each story, one child was the provocateur, and the other child was the victim. All provocations were ambiguous in terms of the intent of the provocateur; it was not clear whether he/she intended the provocation. Examples of provocations included one in which the provocateur knocked over the other child's game pieces when reaching to spin or another where the provocateur spilled water on the other child's painting when getting paint. The two children in each story were same-gender and same-race (Caucasian or African American,) with gender and race counterbalanced across the seven stories. Across the six data collection stories, the emotions displayed by the provocateur were systematically varied with two each of happy, angry, and sad displays. There were three versions of the video stimuli such that every story appeared with each emotion display across the versions. Children were randomly assigned to receive one of the three versions. Children were instructed to imagine they were one of the children in the story who was wearing a distinctive red-numbered shirt; this child was always the victim of the ambiguous provocation. A likert scale ranging from one to five was used to assess the importance of social goals, and instruction and testing on this scale was similar to that described above for the sociometric interview.

After watching each story, children were tested for comprehension of the story by asking them what happened in the story. Stories were shown again if the provocation

was missed. The next part involved children indicating on a scale of 1 to 5 how important a series of social goals were for the particular situation, with 1 being "least important" and 5 being "most important of all." Three types of social goals were used with two examples of each. Prosocial goals focused on how important children felt it was "to fix the problem" and "get along and be friends with the other kid." Passive/avoidant goals assessed how important children felt it was to "stay away from the other kid" and "stay away from trouble or problems." Hostile/instrumental goals had children indicate how important it was to "get back at the other kid" or "get your own way, look strong." These six goals were rated for importance for all stories, and the order of the goals was counterbalanced across stories. The experimenter recorded the highest rated goal as the most important goal for each story; if more than one goal was rated the highest, children were asked to indicate which one was most important. The final question assessed children's response decision step by asking them to indicate what they would do or say if they were in the same situation. These social problem solving responses were coded on a 1-5 scale for hostility/friendliness and a 1-5 scale for passivity/assertiveness (Murphy & Eisenberg, 1997). For hostility/friendliness, a 1 was "very hostile," 3 was "neutral," and 5 was "very friendly" (kappa = .85). For passivity/assertiveness, 1 was "very passive," 3 was "neutral," and 5 was "very assertive" (kappa = .86).

## *Derivation of Variables*

### *Sociometric Variables*

*Peer Acceptance.* Children's peer acceptance was derived by averaging the liking ratings from all participating classmates and then standardizing the scores (z-scores) within the class. Each class had a mean of 0 and a standard deviation of 1, and children

fell into one of three peer acceptance categories. A score equal to or below –1 indicated low acceptance while a score equal to or above +1 indicated high acceptance. Scores in between –1 and +1 dictated the average acceptance level (Parker & Asher, 1993).

*Behavior Nomination Scores.* The nomination categories of *"fights, say mean things, push and shove others," "shy,"* and *"gets along well with others"* were used to assess children's levels of aggression, shyness, and getting along with others. Nominations received for each category were tallied and standardized (z-scores) within the class, so that children received a score for each of the three nomination categories.

*Reciprocated Friendships.* The nomination category of *"like best"* was used to derive reciprocated friend pairs. Children who mutually nominated each other for this category were identified as friends and constituted one reciprocated friend pair (Parker & Seal, 1994). Children could have up to 3 friends. So that gender did not act as a confound for the friend pairs, only same-gender friend pairs were used for analyses. The unit of analysis was the dyadic reciprocated friendship with one child designated as the subject and the other child designated as the friend. Children within a pair were randomly assigned to be either the subject or the friend.

*Creation of Random Pairs of Children.* Random pairs of children were created for the analyses to test that random pairs do not share similarities. These pairs were different from reciprocated pairs in that neither child nominated the other for the question *"like best"* during the sociometric interview. To ensure that the pairs were not unilateral pairs, or pairs in which one child nominated the second, but the nomination was not reciprocated, children within the pair were from the same grade, but different classrooms.

The number of random pairs created equaled the number of reciprocated friend pairs. Since the reciprocated friend pairs used were same-gender and same-grade, all random pairs were same-gender and same-grade. The number of boy-boy and girl-girl random pairs for each of the three grades equaled the frequencies of boy-boy and girl-girl reciprocated friend pairs for each of the three grades.

All children who completed both interview sessions had their identification numbers placed within boxes, separated by gender and grade. Numbers were drawn randomly to create the random pairs with the only restriction being that the children be from different classes. Pairs were created until the number matched the number of reciprocated friend pairs for the gender and grade. Similar to the reciprocated friend pairs, one child in the random pair was randomly assigned as the subject and the other was designated as the other.

*Social Information Processing Variables*

*Individual Goal Totals.* Across the stories, children rated six individual goals. Individual goal totals were created by averaging children's ratings for each goal across the stories. For example, children's ratings for the prosocial goal of "get along and be friends with the other kid" for all data collection stories were averaged and their ratings for the other prosocial goal of "take care of the problem" were averaged. The same was done for the two passive/avoidant goals and the two hostile/instrumental goals.

*Problem Solving Responses.* Overall scores for the hostility/friendliness and passivity/assertiveness were created by averaging the coded scores across the six stories.

*Individual Goal Totals by Emotion.* Children watched two stories for each affective cue: happy, angry, and sad. To create the individual goal totals by emotion,

children's ratings for each goal were averaged for the two stories of corresponding affect. With six goals and three affective cues, children had eighteen individual goal totals by emotion. For example, children's ratings for the prosocial goal "get along and be friends with the other kid" was averaged for the two happy stories to create that individual goal total for happy. The same was done for the other prosocial goal, the two passive/avoidant goals, and the two hostile/instrumental goals.

*Problem Solving Responses by Emotion.* Children had an overall hostility/friendliness score for each emotion as well as an overall passivity/assertiveness score for each emotion. These were calculated by averaging their coded scores for the two stories of corresponding affect. For example, scores for hostility/friendliness on the two happy stories were averaged to create the hostility/friendliness score for happy emotion; the same was done for hostility/friendliness scores for angry and sad. This same method was also used to calculate the passivity/assertiveness scores for each of the three emotions.

# CHAPTER 3

## Results

### *Correlational Analyses*

Correlational analyses served as an index of similarities between reciprocated friend pairs and random pairs of children. Correlations were run for reciprocated friend pairs and random pairs. To test the hypothesis that reciprocated friend pairs are more similar than random pairs, one-sided z-tests were conducted to test that the reciprocated friend pairs' correlations were positive and different from zero, and that the random pairs' correlations were not significantly different from zero. The dependent measures of interest included the sociometric variables of acceptance, aggression, shyness, and getting along with others as well as the social information processing variables of individual goal totals, overall social problem solving response, individual goal totals by each of the three emotion cues, and overall problem solving response by each emotion. Means and standard deviations of sociometric and social information processing variables for reciprocated friend pairs are presented in Table 1 and for random pairs are presented in Table 2. Analyses were run in two separate ways. First correlations between reciprocated friends and random pairs were compared for the group as a whole. Second, as suggested by Brendgen et al. (1999), analyses were run separately for each grade level to test the hypothesis that older children have a higher level of similarity than do younger children. Correlations across emotion cues are presented in Table 3 for both reciprocated and random pairs; correlations by emotion cues are presented in Table 4 for both

reciprocated and random pairs. Multiple z-test comparisons were made, so a conservative significance level of $p < .001$ was used.

*Comparisons of Sociometric Variables*

The sociometric variables analyzed for similarities were children's peer acceptance, aggression, shyness, and getting along with others, as assessed by their peer group. Analyses across grade levels showed that reciprocated friends were significantly similar on the measures of peer acceptance ($z = -12.94$, $p < .001$) and shyness ($z = -6.76$, $p < .001$.) Random pairs of children were not similar on peer acceptance ($z = -2.22$, *ns*) or shyness ($z = -0.75$, *ns.*) Reciprocated friends' results showed that for the measures of aggression ($z = -6.25$, $p < .001$) and getting along with others ($z = -5.41$, $p < .001$), they were significantly similar. Random pairs were also significantly similar on aggression and getting ($z = -4.80$, $p < .001$) along with others ($z = -4.12$, $p < .001$.)

*Comparisons of Sociometric Variables by Grade Level*

The correlational analyses done for each grade showed different patterns than described above for the group as a whole. For first grade pairs, reciprocated friends were found to be significantly similar on measures of peer acceptance ($z = -4.78$, $p < .001$) and shyness ($z = -3.33$, $p < .001$) while random pairs of children were not significantly similar on these sociometric measures ($zs = 1.89, 1.12$, *ns*). Both reciprocated friends and random pairs were significantly similar on getting along with others, ($zs = -3.19, -5.02$, $p < .001$). Neither the reciprocated friend pairs ($z = -2.58$, *ns*) nor the random pairs ($z = -1.96$, *ns*) were significantly similar on aggression. First grade friends showed significant similarity on all of the sociometric measures, except for peer nominations of aggression.

Random pairs were only significantly similar on peer nominations for getting along with others.

Third grade pairs showed a slightly different pattern of results than did the first grade pairs. Reciprocated friends were significantly similar on the all sociometric measures: peer acceptance ($z$ = -11.48, $p$ < .001,) aggression ($z$ = -5.50, $p$ < .001,) shyness ($z$ = -4.36, $p$ < .001,) and getting along with others ($z$ = -4.02, $p$ < .001). Random pairs of children were not significantly similar on peer acceptance, aggression, shyness or getting along with others ($z$s = 1.07, -0.31, -0.98, 2.36, *ns*). The third grade friends were significantly similar on all sociometric measures. However, none of the results for the random third grade pairs were significant.

Fifth grade reciprocated friend pairs showed significant similarity on peer acceptance ($z$ = -6.34, $p$ < .001) and shyness ($z$ = -4.29, $p$ < .001). Reciprocated friend pairs were not significantly similar on aggression ($z$ = -2.53, $p$ < .001) or getting along with others ($z$ = -1.31, $p$ < .001). Results for the random pairs showed that they were significantly similar on peer acceptance ($z$ = -3.98, $p$ < .001) and aggression ($z$ = -4.69, $p$ < .001) but the findings for shyness and getting along were not significant ($z$s = 0.67, -3.05, *ns*). Fifth grade friends showed a different pattern of results than the other grade levels. They were similar on peer acceptance and shyness, like the first and third grade friends; however, they were not similar on aggression or shyness. Yet, the random pairs were significantly similar on aggression. Random pairs were also similar on peer acceptance, and this pattern was found only in fifth grade random pairs.

*Comparisons of Individual Goal Totals*

For the six social goals that children rated during the video interview, correlational analyses were run for each goal to test that reciprocated friend pairs were more similar than random pairs of children. Results for the two prosocial goals showed that reciprocated friend pairs were significantly similar for *"take care of the problem"* ($z = -3.23, p < .001$) as well as for *"get along and be friends"* ($z = -6.76, p < .001$). Results for *"take care of the problem"* ($z = 3.27$, *ns*) and for *"get along and be friends"* ($z = -1.20$, *ns.*) were not significant for random pairs.

The hostile/instrumental goals children rated were *"get own way, look strong"* and *"get back at other kid."* Correlational results for these goals showed that reciprocated friends and random pairs were significantly similar for both goals. Reciprocated friends and random pairs were significantly similar for *"get own way, look strong"* ($z = -6.53, p < .001$; $z = -5.45$, $p < .001$) and for *"get back at other kid"* ($z = -4.93, p < .001$; $z = -4.79, p < .001$).

The final two goals children rated were the passive/avoidant goals of *"stay away from trouble or problems"* and *"stay away from the other kid."* Reciprocated friend pairs were significantly similar for *"stay away from the other kid"* ($z = -3.75, p < .001$), but results for the other goal were not significant ($z = 4.10$, *ns*). Random pairs were significantly similar for both goals, *"stay away from trouble or problems"* ($z = -5.00$, $p < .001$) and *"stay away from other kid"* ($z = -4.85, p < .001$).

Reciprocated friend pairs were significantly similar for both of the prosocial goals and both of the hostile/instrumental goals. The only passive/avoidant goal they were significantly similar on was the goal *"stay away from the other kid."* Significant

similarity was found in the random pairs of children for both hostile/instrumental goals and both passive/avoidant goals.

*Comparisons of Individual Goal Totals by Grade Level*

A break down of the results by grade level showed that children of different ages may have different patterns of similarity. Analyses of the first grade pairs showed that reciprocated friends were not similar for either of the hostile/instrumental goals, *"get own way, look strong"* ($z = -1.32$, *ns*) and *"get back at other kid"* ($z = 1.89$, *ns*). First grade reciprocated friends were also not significantly similar for the passive/avoidant goals: *"stay away from trouble or problems"* ($z = 1.40$, *ns*) and *"stay away from other kid"* ($z = -1.32$, *ns*). For the prosocial goal *"take care of the problem,"* reciprocated friend pairs were not similar ($z = -1.89$, *ns,*) but they were significantly similar for the other goal, *"get along and be friends"* ($z = -5.28$, $p < .001$). Random pairs of children were not significantly similar on any of the individual social goals: *"take care of the problem"* ($z = -2.38$, *ns*); *"get along and be friends"* ($z = 0.25$, *ns*); *"get own way, look strong"* ($z = -2.19$, *ns*); *"get back at other kid"* ($z = -0.93$, *ns*); *"stay away from trouble or problems"* ($z = -2.23$, *ns*); *"stay away from other kid"* ($z = -1.58$, *ns*). First grade reciprocated friends were only similar for the *"be friends"* goal. Random pairs of first grade children were not similar on any of the goals.

For the third grade reciprocated friend pairs, significant similarity was found for *"get along and be friends"* ($z = -5.71$, $p < .001$,) and the hostile goal, *"get own way, look strong"* ($z = -5.52$, $p < .001$.) Third grade reciprocated friend pairs were not significantly similar for *"take care of the problem"* ($z = 0.62$, *ns*) *"get back at other kid"* ($z = -2.82$, *ns*), or *"stay away from other kid"* ($z = 2.02$, *ns*). Reciprocated friends were also not

similar for the goal *"stay away from trouble"* ($z = 2.82$, *ns*), which followed the pattern of results for the group as a whole. Random third grade pairs were significantly similar for the passive/avoidant goal *"stay away from trouble"* ($z = -3.32$ , $p < .001$,) but tests showed that they were not similar for the other five goals: *"take care of the problem"* ($z = 2.44$, *ns,*) *"get along and be friends"* ($z = 2.37$, *ns,*) *"get own way, look strong"* ($z = 1.29$, *ns,*) *"get back at other kid"* ($z = -2.67$, *ns,*) and *"stay away from other kid"* ($z = -2.46$, *ns.*) Third grade reciprocated friend pairs, like the first grade pairs, showed similarity for wanting to be friends with others, while the random pairs did not show significant similarity. However, unlike the first grade friends, third grade reciprocated friend pairs were also similar for wanting to get their own way while the random pairs were not similar. Finally, random pairs of third graders were similar for wanting to stay out of trouble, but this pattern was not found for the third grade reciprocated friend pairs.

Fifth grade reciprocated friend pairs showed a different pattern of results than that of the first and third grade pairs. Reciprocated pairs showed significant similarity for *"get own way, look strong"* ($z = -3.38$, $p < .001$) and for the goal *"get back at other kid"* ($z = -3.42$, $p < .001$.) For the other goals, reciprocated friend pairs did not show significant similarity: *"get along and be friends"* ($z = 3.52$, $p < .001$,) *"stay away from trouble or problems"* ($z = 3.67$, $p < .001$,) *"take care of the problem"* ($z = -2.32$, *ns,*) and *"stay away from the other kid"* ($z = 1.81$, *ns*). Like the reciprocated friends, random pairs were significantly similar for *"get own way, look strong"* ($z = -6.65$, $p < .001$,) but they were also significantly similar for *"stay away from the other kid"* ($z = -3.82$, $p < .001$.) Nonsignificant results for the random pairs were found for *"get along and be friends"* ($z = -0.33$, *ns,*) *"take care of the problem"* ($z = 3.98$, *ns,*) *"get back at other kid"*

($z$ = 1.68, *ns,*) and *"stay away from trouble or problems"* ($z$ = -2.79, *ns.*) Younger pairs of friends in the first and third grade showed similarity on wanting to be friends with the others, but fifth grade reciprocated friend pairs were not similar for this goal. Like the third grade friend pairs, fifth grade friend pairs were similar for wanting to get their own way in the situation. Similarity was also found between fifth grade pairs for the other hostile/instrumental goal of wanting to get back at the other kid, which had not been found in the younger friend pairs. However, the random pairs were also similar for wanting to get their own way, and they were similar for wanting to stay away from the other child, which had not been found in random pairs from the other grades.

*Comparisons of Social Problem Solving Responses*

At the end of each story children viewed, they were asked to say what they would say or do in the same situation. Responses were coded on two levels: a hostility/friendliness scale and a passivity/assertiveness scale. Analyses of the whole group on hostility/friendliness showed that reciprocated friends were not similar ($z$ = 2.85, *ns*) and that random pairs were also not similar ($z$ = 2.67, *ns.*) For the passivity/assertiveness scale, both reciprocated friends ($z$ = -3.60, $p < .001$) and random pairs ($z$ = -4.06, $p < .001$) were significantly similar in their responses.

*Comparisons of Social Problem Solving Responses for Each Grade Level*

As before, correlational analyses of the social problem solving responses were done for each grade level. For the first grade pairs, the reciprocated friend pairs were not similar for hostility/friendliness ($z$ = 2.16, *ns*) and the random pairs also were not similar ($z$ = 2.73, *ns*). The same pattern was found for the passivity/assertiveness. Neither the reciprocated friend pairs ($z$ = -2.58, *ns*) nor the random pairs ($z$ = 0.73, *ns*) were similar

for the passivity/assertiveness of their responses. First grade friend pairs were not similar in the hostility/friendliness or passivity/assertiveness of their social problem solving responses. Random pairs of first graders were also not significantly similar.

Third grade friend pairs were not similar for the hostility/friendliness of their social problem solving responses ($z = 3.52$, *ns*). Random pairs were also not similar on the hostility/friendliness of their responses ($z = -0.93$, *ns*). For the passivity assertiveness scale, reciprocated friend pairs were not similar ($z = 1.29$, *ns,*) but the random pairs were significantly similar ($z = -3.80$, $p < .001$.) The third grade friend pairs showed the same pattern as did the first grade friend pairs for how hostile or friendly their responses were: they were not similar. However, results showed that the third grade random pairs were similar in how passive or assertive their responses were while the friend pairs were not similar.

Finally, the fifth grade reciprocated friend pairs did not show similarity in the hostility/friendliness of their responses ($z = -2.56$, *ns,*) and the random pairs were also not similar ($z = -1.00$, *ns.*) However, the reciprocated friend pairs were similar in how passive/assertive their responses were ($z = -3.40$, $p < .001$) while the random pairs were not similar ($z = -3.02$, *ns.*) Results for the hostility/friendliness of social problem solving responses between reciprocated friend pairs were not significant for any of the grades. Fifth grade friend pairs were the only ones to show any similarity on their social problem solving responses, and this similarity was for how passive or assertive their responses were.

*Comparisons of Individual Goal Totals by Provocateurs' Emotion Display*

*Prosocial Goals.* Results showed that reciprocated friend pairs were significantly similar in their ratings of the *"take care of the problem"* goal when the provocateur was happy ($z = -3.47, p < .001$) and sad ($z = -4.89, p < .001$). Friend pairs were not similar in rating this goal when the provocateur was angry ($z = -2.50$, *ns*.) Random pairs were not similar in rating the *"take care of the problem"* goal when the provocateur was sad ($z = 2.67$, *ns*), happy ($z = 5.04$, *ns*), or angry ($z = 3.78$, *ns*). (See Table 2 for these and other correlations by emotion cue.)

Different results were found for the other prosocial goal, *"get along and be friends."* Reciprocated friend pairs were significantly similar in their ratings for all three cues the provocateurs displayed, happy, angry, and sad ($zs = -5.78, -5.24, -7.38$, $p < .001$). Random pairs were not similar for the happy, angry, or sad cues ($zs = 2.85, -2.55, -2.25$, *ns*) the provocateurs displayed.

These results showed that reciprocated friend pairs, for the most part, were similar in how they rated prosocial goals for any of the three emotions the provocateurs displayed. The only exception was for the goal *"take care of the problem"* when the provocateur was angry; friend pairs were not significantly similar in their goal rating.

*Hostile/Instrumental Goals.* Results for each of the hostile goals by provocateurs' emotion display showed that reciprocated friend pairs and random pairs were similar on almost every analysis. For the goal *"get own way, look strong,"* analyses for happy, angry, and sad provocateur cues showed that friend pairs were similar ($zs = -6.92, -4.95, -6.08$, $ps < .001$) and that random pairs were also similar for the happy, angry, and sad provocateur cues ($zs = -4.17, -6.44, -4.53$, $ps < .001$).

A similar pattern was found for the other hostile/instrumental goal, *"get back at the other kid."* Friend pairs were significantly similar for happy, angry, and sad provocateur cues (*zs* = -3.63, -3.94, -5.38, *ps* < .001). Random pairs were similar for the happy ($z = -6.46$, $p < .001$) and angry cues ($z = -4.56$, $p < .001$) the provocateur displayed. However, random pairs were not similar when the provocateur's cues were sad ($z = 0.50$, *ns*).

Analyses of the hostile/instrumental goals for each type of emotion showed that friend pairs were similar regardless of the affective cues the provocateur displayed. Also, it is important to note that the random pairs of children were also significantly similar in almost every instance.

*Passive/Avoidant Goals.* Results for the two passive/avoidant goals showed little similarity between friend pairs. For the goal *"stay away from trouble or problems,"* analyses showed that friend pairs were not significantly similar during presentation of any of the affective cues: happy ($z = 4.68$, *ns,*) angry ($z = 4.44$, *ns,*) or sad ($z = 2.83$, *ns*). The random pairs were not similar during sad cues ($z = -2.45$, *ns,*) but they were significantly similar when the provocateur's cues were happy ($z = -3.43$, $p < .001$) or angry ($z = -4.63$, $p < .001$).

Results for the other goal, *"stay away from other kid,"* showed that friends were similar only when the provocateur was happy ($z = -4.06$, $p < .001$,) but not when he/she was angry ($z = 2.89$, *ns*) or sad ($z = 1.33$, *ns*). Random pairs were similar when the provocateur was happy ($z = -6.00$, $p < .001$) or angry ($z = -3.88$, $p < .001$,) but not when the provocateur was sad ($z = -0.50$, *ns*).

Reciprocated friend pairs showed similarity only for the goal *"stay away from the other kid,"* but only when the provocateur was happy. Friends were not similar for the other passive/avoidant goal. Random friend pairs were significantly similar for both passive/avoidant goals, but only when the provocateur displayed happy or angry cues.

*Comparisons of Individual Goal Totals by Provocateurs' Emotion Display by Each Grade Level*

*Prosocial Goals.* When examining the goal *"take care of the problem,"* reciprocated friend pairs were significantly similar when the provocateur displayed happy or sad cues. For first grade pairs, the only significant similarity was when the provocateur was sad ($z = -4.33$, $p < .001$). For happy or angry cues by the provocateur, first grade friend pairs were not similar ($zs = 1.76$ and $-2.00$, *ns*). Random pairs of first grade children were not similar when the provocateur showed happy or angry cues ($zs = 2.79, 2.33$, *ns*); however they were significantly similar when the provocateur was sad ($z = -3.09$, $p < .001$). Third grade friend pairs were not similar for any of the cues the provocateurs displayed: happy ($z = -2.61$, *ns*), angry ($z = 2.46$, *ns*), or sad ($z = -2.37$, *ns*). Random pairs of third grade children were also not similar for happy, angry, or sad cue presentations ($zs = 3.38, -1.00, 2.72$, *ns*). Fifth grade friend pairs showed a pattern of results for this goal that was similar to that found for third grade friend pairs. No significant similarities were found for the happy, angry, or sad affective cues ($zs = -2.40, -3.07$, and $1.45$, *ns*). Random pairs of fifth grade children were also not significantly similar for happy ($z = 2.94$, *ns*), angry ($z = 3.75$, ns) or sad cues ($z = 4.06$, *ns*). Children and their friends do not appear to be similar in how they rate the importance of taking care of the problem, except for first grade friend pairs when the provocateur was sad.

When looking at the other prosocial goal, *"get along and be friends,"* reciprocated friend pairs were significantly similar for all types of affective cues the provocateurs displayed. When the analyses were done for each grade level, that pattern did not hold for all grades. First grade reciprocated friend pairs showed significant similarity for the happy, angry, and sad provocateur cues (*z*s = -3.81, -4.18, -5.62, $p < .001$). Random pairs of first graders were not significantly similar on ratings of *"get along and be friends"* for any of the happy, angry or sad affective cues (*z*s = -1.35, 2.95, -1.50, *ns*). Third grade reciprocated friend pairs showed the same pattern as the group, with friends having similar ratings for the happy, angry, and sad provocateur cues (*z*s = -5.21, -4.03, -5.78, $p < .001$). Again, third grade random pairs were not similar for the happy, angry, or sad cues (*z*s = 3.98, .062, -1.24, *ns*). Fifth grade friend pairs were not similar in their *"be friends"* goal ratings for the happy (z = 2.85, *ns*), angry (*z* = 2.53, *ns*) or sad cues (*z* = 3.78, *ns*) displayed by provocateurs. Random pairs of fifth graders also did not show significant similarity for any happy, angry, or sad cues displayed by the provocateur (*z*s = 1.26, -2.58, 1.93, *ns*). Only the first and third grade reciprocated friend pairs showed significant similarity for *"get along and be friends,"* and they were similar for each emotion the provocateurs displayed. Fifth grade reciprocated friend pairs were not significant when emotion was not considered, so it is not surprising that they were not similar when the analyses were broken down by the provocateur's emotion cues.

*Hostile/Instrumental Goals.* Results for the goal *"get own way, look strong"* showed that first grade reciprocated friend pairs were not significantly similar for any of the happy, angry, or sad cue presentations (*z*s = -2.93, 1.63, 1.21, *ns*). Random pairs from the first grade were also not similar when the provocateurs were happy, angry, or

sad (*z*s = -1.72, -2.03, -2.22, *ns*). However, results for the third grade reciprocated friend pairs showed that they were significantly similar for all affective cues: happy ($z = -6.03$, $p < .001$), angry ($z = -4.03$, $p < .001$) and sad ($z = -5.07$, $p < .001$). For the random pairs of third graders, significant similarity was found when the provocateur was angry ($z = -3.61$, $p < .001$,) but the results for when the provocateur was happy or sad were not similar (*z*s = 3.19, 2.53, *ns*). Finally, the fifth grade reciprocated friend pairs showed significant similarity for the angry ($z = -3.16$, $p < .001$) and sad provocateur cues ($z = -4.82$, $p < .001$.) Results for when the provocateur was happy were not significant ($z = -0.33$, *ns*.) While the fifth grade friend pairs showed similarity for only the angry and sad cues, the random pairs of fifth grade children showed significant similarity for the happy, angry, and sad cues (*z*s = -6.21, -6.43, -5.96, *ps* < .001). Results for the goal *"get own way, look strong"* showed that third grade friend pairs were similar for all three emotions the provocateurs displayed, but fifth grade friend pairs were only similar when the provocateur was angry or sad.

Examination of the second hostile/instrumental goal, *"get back at other kid,"* across emotion cues showed that only fifth grade reciprocated friend pairs were similar for this goal. When the analyses were done for each affective cue separately, again only the fifth graders were significantly similar. First grade reciprocated friend pairs were not similar for the happy, angry, or sad affective cues (*z*s = 2.61, 2.19, 1.18, *ns*). Random first grade friend pairs were also not significantly similar for the happy, angry, or sad cues (*z*s = -3.07, -1.97, 3.23, *ns*). Third grade reciprocated friends were also not significantly similar for the happy, angry, or sad cues the provocateurs displayed

(*z*s = -2.14, -2.67, -2.73, *ns*). Random third grade pairs of children were also not significantly similar for the happy, angry, or sad cues (*z*s = -2.88, -2.22, -1.16, *ns*). Measures of similarity for the fifth grade reciprocated friend pairs showed different patterns than found with first and third graders. Reciprocated fifth grade friends were similar in their ratings of *"get back at the other kid"* when the provocateur was angry ($z = -3.44$, $p < .001$) or sad ($z = -4.61$, $p < .001$). Results for the fifth grade friend pairs when the provocateur displayed happy cues were not significant ($z = 1.48$, *ns*). Random pairs of fifth grade children were not significantly similar in ratings for *"get back at the other kid"* when the provocateur was happy, angry, or sad (*z*s = 1.28, -2.87, -1.48, *ns*).

*Passive/Avoidant Goals.* Examination of the passive/avoidant goals by each type of emotion for each grade level showed that reciprocated friend pairs were not similar in how they rated the passive/avoidant goals. Looking at the goal *"stay away from trouble or problems,"* the results for the first grade reciprocated friend pairs were not significant for the happy, angry, or sad provocateur cues (*z*s = 4.25, 2.35, -2.98, *ns*). The same pattern was found for third grade reciprocated friends when the displayed cues were happy, angry, or sad (*z*s = 1.53, 3.01, 3.02, *ns*). The fifth grade reciprocated friend pairs showed the same pattern of not being similar in rating the goal *"stay away from trouble or problems"* when the provocateur was happy, angry, or sad (*z*s = 2.19, 2.68, 4.38, *ns*). On the other hand, random pairs of children did show significant similarity in some cases. For first grade random pairs, significant similarity was found when provocateur was angry ($z = -3.42$, $p < .001$). Results for the happy ($z = 2.82$, *ns*) and sad cue presentations ($z = 2.44$, *ns*) were not significant. The reverse was found for third grade random pairs. They were significantly similar for the happy ($z = -3.23$, $p < .001$) and sad cue

presentations ($z$ = -3.61, $p$ < .001). They were not similar when the provocateur displayed angry cues ($z$ = -1.28, *ns*). Finally, random pairs of fifth grade children showed significant similarity for the happy cues ($z$ = -3.35, $p$ < .001,) but were not similar for the provocateur was angry ($z$ = -2.79, *ns*) or sad cues ($z$ = -0.92, *ns*). In summary, reciprocated friend pairs were not significantly similar for the passive/avoidant goal *"stay away from trouble or problems"* for any of the grade levels or provocateur affective cues. Only the random pairs of children showed significantly similarity for this goal when the affective cues were considered.

Results for the other passive/avoidant goal, *"stay away from other kid,"* showed that, again, reciprocated friend pairs were not similar in how they rated the goal. First grade friend pairs were not significant for the provocateur's happy, angry, or sad cues ($z$s = -1.78, 0, 1, *ns*). Third grade friend pairs were not significant for the happy, angry, or sad cues ($z$s = -2.35, -0.62, 0.54, *ns*) and the fifth grade friend pairs were also not significantly similar when the provocateur was happy, angry, or sad ($z$s = -2.39, -2.85, 1.77, *ns*). Random pairs of children did show significant similarity for different grade levels and affective cue presentations. First grade random pairs of children were significantly similar when the provocateur was happy ($z$ = -3.86, $p$ < .001,) but were not similar when the provocateur was angry ($z$ = 0.86, *ns*) or sad ($z$ = 2.41, *ns*). Third grade random pairs were not similar when the cues were happy, angry or sad ($z$s = -0.94, -2.48, -2.22, *ns*). Finally, fifth grade random pairs were significantly similar for the happy ($z$ = -4.12, $p$ < .001) and angry provocateurs ($z$ = -3.31, $p$ < .001), but they were not similar when the cues were sad ($z$ = 0.92, *ns*). Again, reciprocated friend pairs from each grade level were not significantly similar for the goal *"stay away from the other kid"* when the

provocateur's emotions were considered. Only the random pairs showed significantly similarity.

*Comparisons of Social Problem Solving Responses by Provocateur's Emotion Display*

When analyses were run for the social problem solving responses generated by the children, it was found that reciprocated friend pairs were not significantly similar for the hostility/friendliness of their responses, and neither were random pairs of children. When the analyses were run separately by affective cue, the same pattern of results was found. Reciprocated friend pairs were not similar in how hostile or friendly their responses were when the provocateur was happy ($z = 4.24$, *ns,*) angry ($z = 3.74$, *ns*,) or sad ($z = -1.88$, *ns*). Also, random pairs of children were not similar for the happy, angry, or sad cues ($z$s = 3.71, 3.80, 1.57, *ns*) displayed by the provocateur.

Analyses of the passivity/assertiveness of responses described previously showed that reciprocated friend pairs and random pairs were similar in their social problem solving responses. However, analyses done by affective cues showed that reciprocated friends and random pairs were similar for only certain affective cues. Reciprocated friends were significantly similar when the provocateur was happy ($z = -5.45$, $p < .001$) or sad ($z = -4.68$, $p < .001$). Random pairs were also significantly similar when the provocateur was happy ($z = -4.42$, $p < .001$) or sad ($z = -4.90$, $p < .001$). However, neither the reciprocated friend pairs ($z = -2.85$, *ns*) nor the random pairs of children ($z = -2.45$, *ns*) were similar when the provocateur was angry. The passivity/assertiveness of children's responses was significantly similar for reciprocated friend pairs and random pairs when the provocateur displayed happy affective cues.

*Comparisons of Social Problem Solving Responses by Provocateur's Emotion Display by Each Grade Level*

Analyses run for each grade level on the friendliness/hostility of responses showed that first, third, and fifth grade reciprocated friend pairs were not similar. When the results were done for each type of affective cue, the same pattern was found with only one exception. First grade reciprocated friend pairs did show significant similarity in the hostility/friendliness of their responses when the provocateur was sad ($z$ = -3.41, $p < .001$). For the happy and angry provocateurs, the results were not significant ($z$s = 4.35, 2.56, *ns*). Random pairs of first grade reciprocated friends were not similar for the happy, angry, or sad cues ($z$s = 2.95, 2.85, 0.75, *ns*). Third grade reciprocated friend pairs were not similar for the happy, angry, or sad cues ($z$s = 3.08, 3.38, 2.23, *ns*). Random pairs of third grade children were also not similar for the happy, angry, or sad cues ($z$s = 1, 3.03, 4.45, *ns*). Finally, fifth grade reciprocated friend pairs also were not similar for the happy, angry, or sad cues ($z$s = -1.91, -1.22, 2.35, *ns*). However, fifth grade random pairs were significantly similar when the provocateur was sad ($z$ = -4.06, $p < .001$) but results for the happy ($z$ = 2.85, *ns*) and angry cues ($z$ = 3.68, *ns*) were not significant.

Analyses of the passivity/assertiveness of children's responses by each grade level previously described showed that the only friend pairs that were significantly similar were the fifth grade reciprocated friend pairs. When the analyses were run by each grade level and emotion cue, the results were a little different. For first grade reciprocated friend pairs, significant similarity was found when the provocateur was happy ($z$ = -4.04, $p < .001$). When the provocateur was angry ($z$ = -0.93, *ns*) or sad ($z$ = -2.13, *ns*) the

results were not significant. Random pairs of first grade children were not significantly similar for the happy, angry, or sad cues (*z*s = -1.17, -2.64, -2.31, *ns*). Third grade reciprocated friend pairs were not similar for the happy, angry, or sad cues (*z*s = 1.29, 1.16, 0, *ns*). However, third grade random pairs were similar when the provocateur was sad ($z = -3.32$, $p < .001$). Results for the happy ($z = 0.89$, *ns*) and angry cues ($z = 3.31$, *ns*) were not significant for third grade random pairs. Finally, fifth grade reciprocated friend pairs did show significant similarity when the provocateur was happy ($z = -4.65$, $p < .001$) or sad ($z = -5.31$, $p < .001$). Results for fifth grade friend pairs when provocateur was angry were not significant ($z = -2.56$, *ns*). Analyses showed that random pairs of fifth grade children were similar when the provocateur was angry ($z = -4.04$, $p < .001$), but were not similar when the provocateur was happy ($z = -2.90$, *ns*) or sad ($z = -2.93$, *ns*).

*Regression Analyses*

Hierarchical regression analyses were used to predict children's goal ratings and problem solving responses for each of the variables derived from the social information processing interview, including individual goal totals, social problem solving responses, individual goal totals by each emotion cue, and social problem solving responses by each emotion cue. These analyses served to determine whether after accounting for children's own demographic and social characteristics, knowing something about their friends' demographic, social, and social information processing characteristics added to the prediction of children's social information processing characteristics.

For all analyses with reciprocated friend pairs, the variables entered for each step were the same. In Step 1, children's gender, race, and grade were entered. In Step 2,

children's sociometric variables (peer acceptance, aggression, shyness, and gets along with others) were entered. In Step 3, friends' ratings corresponding to the dependent variable being predicted were entered. In Step 4, friends' sociometric variables (peer acceptance, aggression, shyness, and gets along with others) were entered. Finally, in Step 5, the interaction of friends' ratings for the corresponding dependent variable with grade level was entered to test the prediction that similarities between friends would be stronger for older than younger children.

The same regression analyses were also run for the random pairs of children to see whether the subjects' goal ratings and problem solving could be predicted by the randomly paired child's goal ratings and problem solving. In Step 1, the subjects' gender, race, and grade were entered. In Step 2, the subjects' sociometric variables were entered. In Step 3, the paired child's ratings corresponding to the dependent variable being predicted were entered. In Step 4, the paired child's sociometric variables were entered. Finally, in Step 5, the interaction of paired child's ratings corresponding to the dependent variable with grade level was entered.

*Hierarchical Regression Analyses of Individual Goal Totals*

*Reciprocated Friend Pairs.* Of the six individual goal analyses run for reciprocated friend pairs, only two showed evidence that the friends' characteristics significantly incremented the prediction of children's social goal ratings. Analyses for the prosocial goal *"get along and be friends,"* showed that the overall model accounted for 9.7% of the variance. There were significant increments in the prediction at Step 3 and Step 5 (see Table 5), but the overall model was not significant. In predicting how children would rate the importance of *"get along and be friends,"* their friends' ratings

for the same goal was a significant predictor, and indicated that they both responded to the question in the same manner. The interaction term of the friends' ratings by grade level was also a significant predictor, and indicated that the prediction of children's *"get along and be friends"* ratings was stronger for younger pairs of friends than older pairs.

Analysis of the hostile/instrumental goal *"get own way, look strong"* showed an overall significant model that accounted for 17.7% of the variance in predicting how children would rate this goal (see Table 6). Significant increments in prediction were found at Steps 1 and 2. In the final model, significant predictors of how children rated the goal *"get own way, look strong"* included children's race and friends' peer acceptance rating. Caucasian and African American children rated this goal as significantly less important than did children of other races. Children whose friends had lower peer acceptance ratings rated this hostile/instrumental goal as significantly more important.

For the remaining individual social goals, friends' characteristics did not significantly add to the prediction of how children rated the importance of the goals. The goal *"get back at the other kid"* did have an overall significant model, accounting for 18.6% of the variance ($p < .001$). A significant increment in the prediction of children's ratings was found at Step 1 with the significant predictors being children's race ($\beta = -0.414, p < .001$; $\beta = -0.333, p < .001$) and grade ($\beta = -0.305, p < .05$). Caucasian and African American children rated this goal as significantly less important than did children of other races. Also, as children got older they rated *"get back at the other kid"* as significantly less important. The regression models for the goals *" stay away from the*

*other kid," "stay away from trouble or problems,"* and *"take care of the problem"* were not significant.

*Random Pairs of Children.* Regression analyses for the random pairs of friends were also done for the six social goals. The two hostile goals did have overall significant models, but none of the friends' characteristics significantly added to the prediction. For the goal *"get back at the other kid,"* the model accounted for 19.4% of the variance ($p < .001$), with significant increments in the prediction at Steps 1 and 2. Significant predictors were subject's race ($\beta = -0.349, p < .001$; $\beta = -0.205, p < .05$) and subject's peer acceptance rating ($\beta = -0.219, p < .01$). In this analysis, Caucasian and African American subjects rated this goal as significantly less important than did subjects of other races. The significant predictor of subject's peer acceptance rating indicated that less accepted children rated this hostile/instrumental goal as more important.

The other hostile/instrumental goal, *"get own way, look strong,"* also had a significant model, explaining 16% of the variance ($p < .01$). A significant increment was found at Step 1 and was explained by subject's race ($\beta = -0.401, p < .001$; $\beta = -0.287$, $p < .01$) and grade ($\beta = -0.333, p < .05$). As before, Caucasian and African American subjects' rated this goal as significantly less important than did subjects of other races. Younger children rated this goal as significantly less important than did older children. Regression models for the remaining analyses of random pairs were not significant.

*Hierarchical Regression Analyses of Social Problem Solving Responses*

*Reciprocated Friend Pairs.* Regression analyses were run to determine whether the hostility/friendliness and passivity/assertiveness of children's responses could be predicted by their friend's characteristics and responses. The model predicting children's

hostility/friendliness was a significant overall model, explaining 11.5% of the variance ($p < .05$). The only significant predictor was children's aggression score ($\beta = -0.231$, $p < .01$), and indicated that children who were viewed by their peers as being more aggressive tended to give more hostile responses to the situations.

The model predicting the passivity/assertiveness of children's responses was not a significant model, and did not have any significant predictors.

*Random Pairs of Children.* The same regression analyses to predict the subject's hostility/friendliness and passivity/assertiveness were run for the random pairs. The model predicting hostility/friendliness was not significant. Also, the model predicting the passivity/assertiveness was not significant. However, there was a significant predictor found. The acceptance rating of the paired child, or the one who was not the subject, in the random pair ($\beta = -0.230$, $p < .01$) was a significant predictor of the passivity/assertiveness of the subject's response. In random pairs, subjects' who were paired with children with a low acceptance rating had responses that were significantly more assertive.

*Hierarchical Regression Analyses of Individual Goal Totals by Each Emotion*

*Reciprocated Friend Pairs.* The regression models described above in which the friends' characteristics were significant predictors were *"get along and be friends"* and *"get own way, look strong."* When examining the prediction of how children rated the same six social goals when the affective cue of the provocateur was manipulated, the models in which friends' characteristics were significant predictors were the same as those found previously. In addition, the model for *"take care of the problem"* was significant.

The model predicting how children rated the goal *"get own way, look strong"* when the provocateur displayed happy cues accounted for 19.4% of the variance ($p <$ .001). Significant increments in the prediction were at Steps 1, 2, and 3 (see Table 7). Significant predictors were children's race and aggression. As previously found, Caucasian and African American children rated this goal as significantly less important than children of other races when the provocateur was happy. Also, children who were viewed by their peers as being more aggressive also rated this goal as more important when the provocateur was happy. Their friends' peer acceptance was also a significant predictor; children who had friends with lower peer acceptance rated this goal as more important.

When the provocateur was sad, the overall model for *"get own way, look strong"* was significant and explained 16.1% of the variance. A significant increment in the prediction was found at Step 1 (see Table 8). Significant predictors were children's race and grade, as well as their friends' peer acceptance. As described for when the provocateur was happy, Caucasian and African American children rated this goal as significantly less important, and children who had friends with lower acceptance ratings rated this goal as more important. The grade predictor indicated that as children get older, they rated this goal as significantly less important when the provocateur was sad.

Finally, when the provocateur displayed angry cues, the regression model did significantly predict how children rated the goal *"get own way, look strong,"* but the friends' social characteristics or ratings were not significant predictors. The overall model accounted for a significant amount of the variance, 14.4% ($p < .01$). The only significant predictor was children's race ($\beta = -0.321$, $p < .01$; $\beta = -0.209$, $p < .05$),

showing the same pattern as before that Caucasian and African American children rated this goal as significantly less important.

For the other hostile/instrumental goal, the overall regression models were significant in predicting children's ratings for *"get back at the other kid"* for each of the affective cues displayed by the provocateur, but the only significant predictors were characteristics of the children and not the friends. When the provocateur was happy, the model accounted for 18% of the variance ($p < .001$), and children's race was a significant predictor ($\beta = -0.397, p < .001$; $\beta = -0.324, p < .01$.) Similarly, when the provocateur was angry, the overall model accounted for 14% of the variance ($p < .01$). Children's race was the only significant predictor ($\beta = -0.366, p < .001$; $\beta = -0.254, p < .05$). Results for when the provocateur was sad explained 19% of the variance ($p < .001$), with significant predictors being children's race ($\beta = -0.372, p < .001$; $\beta = -0.341, p < .001$) and grade ($\beta = -0.351, p < .01$). What these analyses showed was that regardless of the affective cues the provocateur displayed, Caucasian and African American children rated the goal *"get back at the other kid"* as significantly less important. When the provocateur was sad, as children got older, they rated this goal as significantly less important.

Regression results described previously for the prosocial goal *"get along and be friends"* showed a nonsignificant model, but how their friends rated this goal and the interaction between friends' ratings and grade level were significant predictors. When the analyses were run for each of the three affective cues, the overall models were not significant, but the friends' ratings were significant predictors. For the happy affective cues, the model only accounted for 4.8% of the variance in predicting children's ratings. However, friends' ratings for the same goal were significant predictors (see Table 9).

Children with friends who rated this goal as important when the provocateur was sad also significantly rated this goal as important. When the provocateur was angry, the overall model accounted for 10.7% of the variance. While the model was not significant, there were significant predictors for children's ratings of this goal. These included the friends' ratings for the same goal as well as their friends' aggression (see Table 10). When children had friends who rated this goal as important when the provocateur was angry, the children also rated this goal as important. Also, children with friends who are more aggressive rated this goal as significantly more important when the provocateur was angry. Finally, the regression model predicting how children responded to the goal *"get along and be friends"* when the provocateur was sad accounted for 10.5% of the variance. Again, the model was not significant, but there were significant predictors in the final model (see Table 11). Children's grade and their friends' ratings for the same goal when sad cues were displayed were significant predictors. As children got older, they rated this goal as significantly more important when the provocateur was sad. Also children whose friends rated this goal as important also rated this goal as significantly more important. However, the interaction term showed that this significant prediction was stronger for younger pairs of friends than older pairs.

Analyses for the model predicting children's ratings of the prosocial goal *"take care of the problem"* described above were not significant, nor were there any significant predictors. When the analyses were run again by each affective cue, the overall models for the happy and angry cues were not significant and had no significant predictors. However, when the provocateur displayed sad cues, there were significant predictors. The overall model accounted for 10.3% of the variance, but was not significant.

Individual predictors that were significant in the model were children's sociometric score for getting along with others ($\beta = 0.148$, $p < .05$) and their friends' ratings for wanting to take care of the problem when the provocateur was sad ($\beta = 0.343$, $p < .05$). Children who got along well with others rated this goal as significantly more important when the provocateur was sad. Also, having friends who rated this goal as important meant that children rated this goal as significantly more important when the provocateur was sad.

Regression models for the passive/avoidant goal *"stay away from trouble or problems"* were not significant and did not have any significant predictors. For the goal *"stay away from the other kid,"* some of the children's characteristics were significant predictors when the provocateur was happy or angry. When the provocateur was happy, Caucasians ($\beta = -0.212$, $p < .05$) and African Americans ($\beta = -0.258$, $p < .05$) rated this goal as significantly less important. Also, children who received more nominations for shyness rated this goal as significantly less important ($\beta = -0.153$, $p < .05$). When the provocateur was angry, children with a lower acceptance rating ($\beta = -0.215$, $p < .05$) rated this goal as significantly more important.

*Random Pairs of Children.* Regression analyses were also conducted for the random pairs of children for each of the six goals by each emotion type. Models for *"take care of the problem"* and *"stay away from trouble or problems"* were not significant and did not have any significant predictors when the provocateur was happy, angry, or sad.

Models predicting importance ratings for the goal *"get along and be friends"* when the provocateur was happy, angry, or sad were not significant overall. However, when the provocateur was happy and sad, gender was a significant predictor ($\beta = 0.158$,

$p < .05$; $\beta = 0.226$, $p < .01$). In both cases, girls rated this goal as significantly more important than did boys.

Models for the hostile/instrumental goal *"get own way, look strong"* were overall significant models for each of the three affective cues. When the cue was happy, the model accounted for 15.5% of the variance ($p < .01$), and the subject's race ($\beta = -0.356$, $p < .001$; $\beta = -0.340$, $p < .001$) and grade ($\beta = -0.313$, $p < .05$) were significant predictors. In situations when the provocateur was happy, Caucasian and African American subjects rated this goal as significantly less important, and younger subjects rated it as significantly more important. When the provocateur was angry, the model significantly explained 14.1% of the variance ($p < .001$). Again, subjects' race ($\beta = -0.340$, $p < .001$; $\beta = -0.178$, $p < .10$) and grade ($\beta = -0.349$, $p < .05$) were significant predictors. In this case, only Caucasian subjects rated this goal as significantly less important than subjects of other races. As before, younger subjects rated this goal as more important when the provocateur was angry. Finally, for sad cues, the model significantly explained 16.3% of the variance ($p < .001$). The only significant predictor was subject's race ($\beta = -0.436$, $p < .001$; $\beta = -0.290$, $p < .01$) indicating that Caucasians and African Americans rated this goal as significantly less important when the provocateur was sad than did subjects of other races.

Models for the other hostile/instrumental goal *"get back at other kid"* reached significance for each affective cue the provocateur displayed; however the only significant predictors were characteristics of the subject. When the provocateur was happy, the model explained 20.6% of the variance ($p < .001$). Significant predictors were subject's race ($\beta = -0.297$, $p < .001$; $\beta = -0.142$, $p = .153$) and subject's peer acceptance

($\beta = -0.277, p < .001$). These results showed that Caucasian subjects rated this goal as significantly less important when the provocateur was happy than did children of other races. For angry cues, the model was significant and explained 14.6% of the variance ($p < .01$), with the only significant predictor being subject's race ($\beta = -0.372, p < .001$; $\beta = -0.299, p < .01$). Caucasian and African American children rated this goal as significantly less important than did children of other races. Finally, when the provocateur displayed sad cues, the model for random pairs of children explained 20.3% of the variance ($p < .001$). Significant predictors were subject's race ($\beta = -0.299, p < .01$; $\beta = -0.130, p = .193$,) grade ($\beta = -0.358, p < .01$,) and acceptance rating ($\beta = -0.234, p < .01$). When the provocateur was sad, Caucasian subjects rated this goal as significantly less important that did subjects of other races, not including African Americans. Also, younger subjects and subjects with lower acceptance ratings rated this goal as significantly more important.

Regression analyses for random pairs of children for the passive/avoidant goal *"stay away from the other kid"* did not show any significant results. When the provocateur displayed angry cues, the model was significant at Steps 2, 3, and 4. However, the final model was not significant, and there were no significant predictors in the final model. Finally, when the provocateur displayed sad affective cues, the overall regression model was not significant. The subject's shyness ($\beta = -0.162, p < .05$) was a significant predictor, indicating that subjects receiving more nominations for shyness rated this goal as less important when the provocateur was sad.

*Hierarchical Regression Analyses of Social Problem Solving Responses for Each Emotion Cue*

*Reciprocated Friend Pairs.* Hierarchical regression analyses were run for the hostility/friendliness and passivity/assertiveness of children's social problem solving responses for each of the three affective cues. In predicting the hostility/friendliness of children's responses, when the provocateur displayed sad affective cues, the overall model significantly explained 11.6% of the variance ($p < .05$). The significant predictor of hostility/friendliness of social problem solving responses was children's aggression scores ($\beta = -0.185$, $p < .05$), indicating that aggressive children gave responses that were significantly more hostile when the provocateur displayed sad cues. Analyses for when the provocateur was happy did not yield an overall significant model, explaining only 10.6% of the variance. However, there were significant predictors of the hostility/friendliness of children's social problem solving responses when the provocateur was happy. These included children's aggression scores ($\beta = -0.218$, $p < .01$,) friends' race ($\beta = -0.103$, $p = .37$; $\beta = -0.266$, $p < .05$,) and the hostility/friendliness of their friends' responses ($\beta = -0.299$, $p < .05$). When the provocateur was happy, aggressive children gave responses that were significantly more hostile. Also, children with African American friends gave responses that were significantly more friendly. Finally, when the provocateur was sad, having friends who gave more friendly responses predicted that children would give more hostile responses. The model for predicting children's hostility/friendliness when the provocateur was angry was not significant, but children's aggression score was a significant predictor ($\beta = -0.186$, $p < .05$). Aggressive children gave more hostile responses when the provocateur was angry.

Regression analyses to predict children's passivity/assertiveness in their social problem solving responses was also done for each affective cue. None of the models were significant and there were no significant predictors.

*Random Pairs of Children.* Analyses for the random pairs of children were done for the hostility/friendliness and passivity/assertiveness for each affective cue. Results for the hostility/friendliness did not show significant models for any of the affective cues. However, when the affective cues displayed by the provocateur were sad, the peer acceptance of the other child in the pair was a significant predictor of the hostility/friendliness of the subject's response ($\beta = -0.167$, $p < .05$). Subjects paired with another child who had a low acceptance rating had more friendly social problem solving responses.

Regression analyses for the passivity/assertiveness of subjects' responses also did not show any significant models. However, when the provocateur was happy ($\beta = -0.187$, $p < .05$) or sad ($\beta = -0.166$, $p < .05$), the peer acceptance of the other child in the pair was a significant predictor of subjects' responses. Subjects paired with children who had a lower acceptance rating gave more assertive responses when the provocateur was happy or sad. When the provocateur was angry, a significant predictor was subjects' aggression ($\beta = -0.246$, $p < .01$) indicating that subjects high on aggression give more passive responses.

# CHAPTER 4

## Discussion

The purpose of the current study was to examine the similarities between elementary school-age children and their friends. Previous research focused heavily on demographic variables, with some attention given to social and behavioral characteristics. The researcher focused primarily on the similarities friends have in their social information processing characteristics.

### *Individual Social Goals*

The first hypothesis was that children and their friends would have more similar ratings of social goals than would random pairs of children. Correlational analyses showed that for the most part this hypothesis was supported. Of the six social goals that children rated, results showed that reciprocated friend pairs were significantly similar in their ratings for five of the six goals. The only goal on which friend pairs were not similar was the passive/avoidant goal *"stay away from trouble."* Results for the random pairs of children showed that they were significantly similar on four out of the six goals. The two goals on which they were not similar were the two prosocial goals, *"take care of the problem"* and *"get along and be friends."* These results indicated that while friends pairs were similar for more of the goals than random pairs of children, there may not be enough variance in how children in this sample rated the social goals in order to detect individual differences.

However, when examining the regression analyses for the six individual social goals, characteristics of the friend, including social characteristics and goal ratings, were significant predictors of children's ratings only in the analyses for the friend pairs. Friends' goal ratings were a significant predictor of children's ratings for the model predicting the goal *"get along and be friends,"* and friends' acceptance rating was a significant predictor of children's ratings for the model predicting the goal *"get own way, look strong."* For the random pairs, information about the other child in the pair never significantly predicted subjects' social goal ratings. Thus, the results from the regression models showed that it is important to examine similarities between children beyond just correlational analyses. Running multiple correlation tests can inflate the probability that significant results will be found. However, including regression models to predict children's goal ratings from their friends' characteristics can provide information beyond the correlations.

In the regression analyses of random pairs of children, there were significant predictors of subjects' goal ratings, including race, grade, and peer acceptance, but they were always characteristics of the subject. Previous studies on social goals showed that there were links between characteristics of the child and how he/she responded to social goals (Erdley & Asher, 1996), and that information is shown in the regression analyses of the random pairs of children. Children of races other than Caucasian and African American rated the hostile/instrumental goals as more important. Also, children with lower peer acceptance rated these goals as more important. These results from the random pairs are consistent with other research on children's social goals (e.g., Erdley & Asher, 1996).

It was hypothesized that similarities between friends would be stronger for older than younger children. First grade friend pairs were significantly similar for only one goal, while the third and fifth grade pairs each showed significant findings for two of the goals. The hypothesis that older friend pairs would be more similar than younger friend pairs was not overwhelmingly supported since the difference of one goal could be due to chance. However, the noteworthy point is that the goals on which friend pairs were significantly similar were not the same for each grade level. First and third grade friend pairs were similar for the goal *"get along and be friends."* Third and fifth grade friend pairs were similar for *"get own way, look strong,"* and only fifth grade friend pairs were similar for the other hostile/instrumental goal *"get back at the other kid."* These results indicated that the similarities between friend pairs change as the children get older. When children are younger, the quality of wanting to get along with others and be friends could be the common ground that friends share. However, as they get older and continue to encounter different types of children, the qualities that friends share change. The oldest children in this sample were more similar to their friends in rating the hostile/instrumental goals rather than the prosocial goals, suggesting that the common ground between friends was not prosocial goals, but rather hostile goals. More specifically, as children get older it may not be as important to know the prosocial goals that their friends endorse. Rather, as children get older they may want to ensure that their friends have the same stance on how important hostile/instrumental goals are for social situations.

The hierarchical regression model for the prosocial goal *"get along and be friends"* showed that the interaction of friends' ratings with grade was a significant

predictor of how children rated this goal. The indication is that how children's friends rated this goal predicted how the children rated the goal; however, this prediction was stronger for younger pairs of friends than it was for older pairs. For this particular prosocial goal, the hypothesis that older friend pairs would be more similar than younger friend pairs was not supported. In fact, the results suggested that the opposite pattern occurred. The findings of Brendgen et al. (1999) showed that friends' aggressiveness significantly predicted children's aggressive responses, but only for older children. Those findings may be specific to the response generation step of the social information processing model (Crick & Dodge, 1994). When looking at the social goal step of children's social information processing, friends' social goal ratings for the *"get along and be friends"* goal were stronger predictors of younger children's goal ratings. In regression models predicting the other five social goals, the interaction terms of friends' ratings by grade were not significant. However, since the number of friend pairs used in this study was small, the nonsignificant results in these analyses may be due to the small number of pairs.

### *Social Problem Solving Responses*

Another purpose of this study was to examine similarities between friend pairs in the social problem solving responses they gave to the ambiguous provocation situations. The responses were coded on two scales: hostility/friendliness and passivity assertiveness. The hypothesis followed the similarity-attraction hypothesis and stated that reciprocated friend pairs would be more similar in the hostility/friendliness and passivity/assertiveness of their responses than would random pairs of children. Correlational analyses showed that neither the friend pairs nor the random pairs were

similar in the hostility/friendliness of their responses were. Both friend pairs and random pairs were significantly similar in the passivity/assertiveness of their responses. However, when the correlational analyses were conducted for each grade level, it was the fifth grade friend pairs who were significantly similar in the passivity/assertiveness of their responses and the third grade random pairs who were significantly similar in the passivity/assertiveness of their responses. A possible reason for this finding could be that the standard deviations across all grades were very small, making it difficult for individual differences to be found for friend pairs. Thus, the only significant findings were within the analyses for the individual grades.

Examination of the regression models predicting the hostility/friendliness and passivity/assertiveness of children's responses for friend pairs did not show that any friend characteristics were significant predictors. One interesting finding, which is congruent to that found by Brendgen et al. (1999), was that children's aggression was a significant predictor of the hostility/friendliness of their responses. Brendgen and colleagues (1999) had found that aggressive children gave more hostile responses, and this study showed that aggressive children gave responses that were more hostile. The previous research indicated that this characteristic should predict that frequency of hostile responses for children, suggesting that the same result should be found in friend pairs and in random pairs. However, in this study, the children's aggression was a significant predictor only in friend pairs, and not random pairs. An explanation for this discrepancy could be a power issue because the model for hostility/friendliness in random pairs did not show subject's aggression as being significant, but it was in the expected direction.

The regression model for random pairs predicting the passivity/assertiveness of subjects' responses did yield a significant predictor: the peer acceptance of the other child with whom the subject was paired. Of all of the regression analyses completed for random pairs of friends, the only model in which the paired child's characteristics significantly predicted the subject's responses were the models for passivity/assertiveness. This finding may be due to chance.

*Individual Social Goals and Provocateur Emotions*

The reformulated social information processing model (Lemerise & Arsenio, 2000) incorporates the role of emotion into each component and step, and includes the provocateur's emotion displays as cues children use to process social information. The hypothesis for this study was that children and their friends would be more similar than random pairs in their goal ratings across provocateur emotion displays as well as within each type of emotion display. Correlational analyses showed that ratings for three of the goals, *"get along and be friends," "get own way, look strong,"* and *"get back at the other kid,"* were significantly similar between friend pairs for all three types of emotion displays. These three goals were consistently the ones on which friend pairs showed significant similarity in the overall correlational analyses. The explanation may be that the standard deviations in ratings for these three goals were the highest for children and their friends. There were more individual differences in how children rated this goal, which enabled similarities to be found with their friends'ratings. When the sample as whole responds in the same manner to the goals, it makes it difficult to tease out similarities between friends. Thus, the hypothesis that children and their friends will rate

social goals similarly regardless of the emotions the provocateur displayed was supported for these three goals.

With the exception of the *"stay away from trouble or problems,"* friend pairs did show similarity in the goal ratings for some emotion displays, but not all. However, it is important to note that while the findings did not show significant similarity for each provocateur emotion display for *"take care of the problem"* and *"stay away from the other kid,"* they were in the correct direction. Again, the indication may be that the small sample size may be problematic when trying to find significant similarity between friend pairs for each type of provocateur emotion display.

The passive/avoidant goal, *"stay away from trouble or problems,"* was unique in that for all analyses the friend pairs were not significantly similar and there were no significant predictors of children's ratings of this goal, whether across emotions or for each individual emotion. Correlational analyses showed that friend pairs were not significantly similar in their ratings of this goal, and in fact the results were always in the opposite direction indicating that friends were very dissimilar in how they rated this goal. Regression analyses across emotion and within each emotion did not show any significant models or significant predictors in how children rated this goal. Standard deviations were small in the whole sample of how children and their friends rated this goal, but that still does not explain the results indicating dissimilarity. Also, correlational results for the random pairs of children across emotions and within each type of emotion showed that they were similar in their ratings of this goal. Further research should be conducted on passive/avoidant goals to understand what it was about this specific goal that showed friends to be dissimilar in their ratings.

Random pairs of children, like the friend pairs, showed significantly similarity across emotion displays for the *"get own way, look strong"* goal. However, the regression analyses for random pairs for this goal did not show the other child's characteristics significantly predicting the subject's ratings. In the friend pairs, friend characteristics were significant predictors for the *"get own way, look strong"* and *"get along and be friends"* goals. Again, correlational analyses can provide information into similarities between friends; however, hierarchical regression can be more beneficial when there are small individual differences in the sample.

The grade differences in similarities between friends for each provocateur emotion display follow the same pattern as they did across emotion displays. Younger children were more similar for the prosocial goals when the provocateur was happy, angry, or sad, but as children got older they were no longer similar for the prosocial goals, but rather similar for the hostile/instrumental goals. Interestingly, results for the fifth grade friend pairs showed that they were similar for both hostile/instrumental goals when the provocateur displayed angry or sad cues. However, they were not similar when the provocateur was happy. This finding suggests that children do take into account the emotion cues of the situation when deciding the importance of particular social goals. Friends appear to share the same interpretation of when hostile/instrumental goals should be used when the provocateur was sad or angry. Yet, they did not share the same perception when the provocateur was happy.

*Social Problem Solving Responses and Provocateur Emotions*

Across emotions, significant similarity between friends was found only for passivity/assertiveness. Results for happy and sad provocateur cues showed that friend

pairs and random pairs of children were significantly similar for passivity/assertiveness. However, the regression analyses predicting children's passivity/assertiveness for each provocateur emotion display were not significant and did not have any significant predictors. The correlational analyses for hostility/friendliness were not significant for the individual provocateur emotion displays, suggesting that friend pairs were not similar in hostility/friendliness. The regression analyses for hostility/friendliness showed that for each of the emotions, happy, angry, and sad, children's aggression was a significant predictor. Aggression appears to be a stronger predictor of children's social problem solving responses than it is of the importance social goal ratings. Also, the provocateur's emotions in the situation do not appear to elicit different reactions for each type of emotion. Aggressive children give more hostile responses regardless of the type of emotion displayed. While the purpose of this study was not to explore the impact of emotion on children's social information processing, the results call for further research to be conducted to understand why aggressive children give hostile responses regardless of the emotion the provocateur displays.

*Limitations*

One limitation to this study has been mentioned already -- that of the small sample size. Many of the hypothesized results were in the correct direction, but were not statistically significant. A larger sample size would allow for a deeper understanding of similarities between children and their friends in their social information processing.

Another limitation discussed previously was the lack of individual differences throughout the whole sample. The variance among all the social information processing variables was small, making it difficult to detect similarities between children and their

friends. Instead, the entire sample was very similar in social information processing. Gathering more pairs of children could help increase the variance, which would provide more power and possibly more significant findings.

One area that could not be adequately addressed was the role that race played in similarities between friends. The regression analyses showed that Caucasian and African American children rated the hostile/instrumental goals as less important than did children of other races. It would be interesting to delve further into the role that race might play in children's social information processing mechanisms, including social goal ratings by conducting a similar study with a more diverse sample to determine whether these findings were characteristic of the population or just this sample. Since the sample was predominantly Caucasian, it was also difficult to look at whether friendships that were composed of children of the same race were any more or less similar than friendships composed of children of opposite races.

### *Conclusions*

In conclusion, the researcher sought to explore the similarities between children and their friends in their social information processing characteristics, including social goals and social problem solving responses. While the limitations discussed above do exist, the results do show some support for friend pairs being more similar than random pairs of children. Further research in this area with a larger sample of children could help alleviate the limitations and provide a clearer picture of whether children share social information processing patterns with their friends. Also, longitudinal research would advance the knowledge of the predictability of children's social information processing patterns from their friends' patterns. Studies in social information processing have

shown that it is a valid and useful tool for understanding children's social development. Gaining knowledge into the characteristics that children share with their friends can continue to advance the research on similarities between children and their friends. The similarity-attraction hypothesis has been a focus of friendship research, but that focus has been somewhat narrow. This study showed that the similarity-attraction hypothesis does hold true in children's social information processing characteristics between friends.

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Table 1

*Means and Standard Deviations for Sociometric and Social Information Processing Variables in Reciprocated Friend Pairs*

| | Child | | Friend | |
|---|---|---|---|---|
| | Mean | SD | Mean | SD |
| Sociometric Variables | | | | |
| 1. Peer acceptance | 0.33 | 0.86 | 0.37 | 0.87 |
| 2. Aggression | -0.20 | 0.81 | -0.18 | 0.78 |
| 3. Shyness | 0.00 | 0.96 | -0.12 | 0.89 |
| 4. Gets along | 0.24 | 1.05 | 0.28 | 1.03 |
| Individual Social Goals | | | | |
| 1. Take care of the problem | 3.92 | 0.87 | 3.93 | 0.85 |
| 2. Get along and be friends | 3.84 | 1.02 | 3.81 | 1.06 |
| 3. Get own way, look strong | 2.17 | 1.17 | 2.06 | 1.08 |
| 4. Get back at the other kid | 1.86 | 1.05 | 1.88 | 1.05 |
| 5. Stay away from trouble | 3.85 | 0.96 | 3.77 | 1.05 |
| 6. Stay away from other kid | 2.43 | 1.01 | 2.43 | 0.97 |
| Social Problem Solving Responses | | | | |
| 1. Hostility/Friendliness | 3.19 | 0.70 | 3.16 | 0.73 |
| 2. Passivity/Assertiveness | 3.48 | 0.56 | 3.50 | 0.57 |

Table 2

*Means and Standard Deviations for Sociometric and Social Information Processing Variables in Random Pairs of Children*

| | Subject | | Paired Child | |
|---|---|---|---|---|
| | Mean | SD | Mean | SD |
| Sociometric Variables | | | | |
| 1. Peer acceptance | 0.00 | 1.00 | 0.00 | 1.00 |
| 2. Aggression | 0.00 | 0.96 | 0.00 | 0.96 |
| 3. Shyness | 0.00 | 0.92 | 0.00 | 1.00 |
| 4. Gets along | 0.00 | 1.05 | 0.00 | 0.98 |
| Individual Social Goals | | | | |
| 1. Take care of the problem | 3.90 | 0.82 | 3.85 | 0.85 |
| 2. Get along and be friends | 3.78 | 1.04 | 3.64 | 1.06 |
| 3. Get own way, look strong | 2.22 | 1.20 | 2.21 | 1.17 |
| 4. Get back at the other kid | 1.91 | 1.08 | 1.99 | 1.08 |
| 5. Stay away from trouble | 3.80 | 0.97 | 3.73 | 1.01 |
| 6. Stay away from other kid | 2.48 | 0.99 | 2.54 | 0.98 |
| Social Problem Solving Responses | | | | |
| 1. Hostility/Friendliness | 3.17 | 0.71 | 3.08 | 0.76 |
| 2. Passivity/Assertiveness | 3.45 | 0.51 | 3.45 | 0.60 |

Table 3

*Correlations for Sociometric and Social Information Processing Variables for Reciprocated Friends and Random Pairs*

| | All n = 224 | | 1st Grade n = 65 | | 3rd Grade n = 95 | | 5th Grade n = 64 | |
|---|---|---|---|---|---|---|---|---|
| Variable | Friends | Random | Friends | Random | Friends | Random | Friends | Random |
| Sociometric | | | | | | | | |
| Acceptance | 0.427** | 0.020 | 0.258* | -0.051 | 0.581** | -0.012 | 0.387** | 0.198 |
| Aggression | 0.150* | 0.096 | 0.093 | -0.057 | 0.242* | 0.001 | 0.096 | 0.253* |
| Shyness | 0.169* | 0.003 | 0.143 | -0.019 | 0.167 | 0.010 | 0.223 | 0.007 |
| Gets along | 0.119 | 0.070 | 0.134 | 0.276* | 0.145 | -0.057 | 0.026 | 0.128 |
| Individual Goals | | | | | | | | |
| Take care of problem | 0.042 | -0.049 | 0.053 | 0.081 | -0.004 | -0.061 | 0.079 | -0.199 |
| Be friends | 0.169* | 0.006 | 0.301* | -0.001 | 0.256* | -0.056 | -0.162 | 0.002 |

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed)

Table 3: *Continued*

| Variable | All n = 224 | | 1st Grade n = 65 | | 3rd Grade n = 95 | | 5th Grade n = 64 | |
|---|---|---|---|---|---|---|---|---|
| | Friends | Random | Friends | Random | Friends | Random | Friends | Random |
| Individual Goals | | | | | | | | |
| Get own way | 0.160* | 0.120 | 0.025 | 0.070 | 0.243* | -0.018 | 0.152 | 0.412** |
| Get back at kid | 0.098 | 0.091 | -0.053 | 0.014 | 0.079 | 0.072 | 0.154 | 0.042 |
| Stay away from trouble | -0.070 | 0.100 | -0.028 | 0.069 | -0.079 | 0.104 | -0.176 | 0.109 |
| Stay away from kid | 0.060 | 0.097 | 0.025 | 0.038 | 0.043 | 0.060 | 0.096 | 0.187 |
| Problem Solving Response | | | | | | | | |
| Hostility/Friendliness | -0.037 | -0.032 | -0.067 | -0.101 | -0.116 | 0.009 | 0.092 | 0.020 |
| Passivity/Assertiveness | 0.054 | 0.069 | 0.093 | -0.008 | -0.018 | 0.133 | 0.153 | 0.124 |

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed)

Table 4

*Correlations for Sociometric and Social Information Processing Variables for Reciprocated Friends and Random Pairs by Provocateur's Emotion Display*

| | All n = 224 | | 1st Grade n = 65 | | 3rd Grade n = 95 | | 5th Grade n = 64 | |
|---|---|---|---|---|---|---|---|---|
| Variable | Friends | Random | Friends | Random | Friends | Random | Friends | Random |
| Individual Goals for Happy | | | | | | | | |
| Take care of the problem | 0.052 | -0.102 | -0.044 | -0.106 | 0.067 | -0.107 | 0.084 | -0.144 |
| Be friends | 0.133* | -0.037 | 0.183 | 0.027 | 0.222* | -0.143 | -0.114 | -0.024 |
| Get own way | 0.180** | 0.075 | 0.117 | 0.043 | 0.277** | -0.097 | 0.002 | 0.379** |
| Get back at kid | 0.058 | 0.155* | -0.094 | 0.126 | 0.047 | 0.080 | -0.034 | -0.025 |
| Stay away from trouble | -0.089 | 0.048 | -0.217 | -0.107 | -0.024 | 0.100 | -0.070 | 0.149 |
| Stay away from kid | 0.065 | 0.138* | 0.048 | 0.189 | 0.054 | 0.009 | 0.082 | 0.210* |

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed)

Table 4: *Continued*

| | All n = 224 | | 1st Grade n = 65 | | 3rd Grade n = 95 | | 5th Grade n = 64 | |
|---|---|---|---|---|---|---|---|---|
| Variable | Friends | Random | Friends | Random | Friends | Random | Friends | Random |
| Individual Goals for Angry | | | | | | | | |
| Take care of problem | 0.025 | -0.063 | 0.058 | -0.077 | -0.060 | 0.011 | 0.129 | -0.180 |
| Be friends | 0.110 | 0.028 | 0.213 | -0.118 | 0.149 | -0.004 | -0.091 | 0.094 |
| Get own way | 0.099 | 0.161* | -0.039 | 0.059 | 0.149 | 0.121 | 0.133 | 0.392** |
| Get back at kid | 0.063 | 0.082 | -0.068 | 0.057 | 0.070 | 0.051 | 0.155 | 0.112 |
| Stay away from trouble | -0.080 | 0.088 | -0.080 | 0.154 | -0.087 | 0.017 | -0.099 | 0.109 |
| Stay away from kid | 0.036 | 0.062 | 0.000 | -0.012 | 0.004 | 0.062 | 0.113 | 0.149 |

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed)

Table 4: *Continued*

| | All n = 224 | | 1st Grade n = 65 | | 3rd Grade n = 95 | | 5th Grade n = 64 | |
|---|---|---|---|---|---|---|---|---|
| Variable | Friends | Random | Friends | Random | Friends | Random | Friends | Random |
| Individual Goals for Sad | | | | | | | | |
| Take care of the problem | 0.093 | -0.032 | 0.225 | 0.130 | 0.056 | -0.072 | -0.032 | -0.203 |
| Be friends | 0.192** | 0.018 | 0.326** | 0.033 | 0.260* | 0.016 | -0.185 | -0.056 |
| Get own way | 0.146* | 0.086 | -0.023 | 0.071 | 0.213* | -0.063 | 0.265* | 0.357** |
| Get back at kid | 0.113 | -0.001 | -0.020 | -0.139 | 0.073 | 0.014 | 0.249* | 0.034 |
| Stay away from trouble | -0.034 | 0.027 | 0.119 | -0.083 | -0.088 | 0.121 | -0.228 | 0.013 |
| Stay away from kid | -0.008 | 0.001 | -0.016 | -0.082 | -0.003 | 0.051 | -0.047 | -0.013 |

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed)

Table 4: *Continued*

| Variable | All n = 224 | | 1st Grade n = 65 | | 3rd Grade n = 95 | | 5th Grade n = 64 | |
|---|---|---|---|---|---|---|---|---|
| | Friends | Random | Friends | Random | Friends | Random | Friends | Random |
| Problem Solving Response for Happy | | | | | | | | |
| Hostility/Friendliness | -0.089 | -0.058 | -0.226 | -0.118 | -0.091 | 0.011 | 0.054 | -0.113 |
| Passivity/Assertiveness | 0.120 | 0.084 | 0.198 | 0.021 | -0.017 | 0.119 | 0.251* | 0.119 |
| Problem Solving Response for Angry | | | | | | | | |
| Hostility/Friendliness | 0.015 | -0.057 | -0.092 | -0.111 | -0.108 | 0.091 | 0.022 | -0.175 |
| Passivity/Assertiveness | 0.089 | 0.027 | 0.014 | 0.095 | 0.014 | -0.106 | 0.092 | 0.206 |

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed)

Table 4: *Continued*

| | All n = 224 | | 1st Grade n = 65 | | 3rd Grade n = 95 | | 5th Grade n = 64 | |
|---|---|---|---|---|---|---|---|---|
| Variable | Friends | Random | Friends | Random | Friends | Random | Friends | Random |
| Problem Solving Response for Sad | | | | | | | | |
| Hostility/Friendliness | -0.059 | -0.011 | 0.150 | -0.009 | -0.049 | -0.169 | -0.080 | 0.203 |
| Passivity/Assertiveness | 0.037 | 0.098 | 0.064 | 0.074 | 0.000 | 0.104 | 0.308* | 0.117 |

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed)

Table 5

*Hierarchical Regression Analyses Predicting Children's Ratings for the "get along and be friends" Goal in Reciprocated Friend Pairs*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 1: Children's Demographics | | | | | |
| Gender | 0.111 | 0.151 | 0.054 | 0.118 | 0.014 |
| Race 1 | 0.003 | 0.296 | 0.009 | | |
| Race 2 | 0.174 | 0.354 | 0.053 | | |
| Grade | 0.417 | 0.175 | 0.620* | | |
| Step 2: Children's Sociometric | | | | | |
| Acceptance rating | 0.009 | 0.113 | 0.074 | 0.171 | 0.015 |
| Aggression | -0.010 | 0.106 | -0.076 | | |
| Shyness | -0.002 | 0.078 | -0.002 | | |
| Gets along | 0.002 | 0.074 | 0.022 | | |
| Step 3: Friend's Goal Ratings | | | | | |
| Ratings for *"get along and be friends"* | 0.471 | 0.143 | 0.489*** | 0.228 | 0.023* |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 5: *Continued*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 4: Friend's Demographics and Sociometric | | | | | |
| Race 1 | 0.141 | 0.311 | 0.052 | 0.262 | 0.017 |
| Race 2 | 0.010 | 0.371 | 0.032 | | |
| Acceptance rating | -0.005 | 0.106 | -0.044 | | |
| Aggression | -0.166 | 0.117 | -0.127 | | |
| Shyness | -0.004 | 0.082 | -0.031 | | |
| Gets along | -0.007 | 0.073 | -0.070 | | |
| Step 5: Interaction Term | | | | | |
| *"be friends"* x grade | -0.113 | 0.044 | -0.745** | 0.311 | 0.028** |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 6

*Hierarchical Regression Analyses Predicting Children's Ratings for the "get own way, look strong" Goal in Reciprocated Friend Pairs*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 1: Children's Demographics | | | | | |
| Gender | 0.005 | 0.164 | 0.022 | 0.299*** | 0.089*** |
| Race 1 | -1.196 | 0.325 | -0.382*** | | |
| Race 2 | -0.906 | 0.388 | -0.241* | | |
| Grade | -0.211 | 0.114 | -0.275 | | |
| Step 2: Children's Sociometric | | | | | |
| Acceptance rating | -0.104 | 0.124 | -0.077 | 0.359*** | 0.040* |
| Aggression | 0.180 | 0.117 | 0.125 | | |
| Shyness | -0.006 | 0.084 | -0.053 | | |
| Gets along | -0.000 | 0.081 | -0.006 | | |
| Step 3: Friend's Goal Ratings | | | | | |
| Ratings for *"get own way, look strong"* | 0.000 | 0.139 | 0.001 | 0.376*** | 0.012 |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 6: *Continued*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 4: Friend's Demographics and Sociometric | | | | | |
| Race 1 | 0.007 | 0.344 | 0.022 | 0.415*** | 0.031 |
| Race 2 | 0.272 | 0.404 | 0.076 | | |
| Acceptance rating | -0.251 | 0.116 | -0.187* | | |
| Aggression | -0.174 | 0.128 | -0.116 | | |
| Shyness | -0.009 | 0.090 | -0.066 | | |
| Gets along | 0.009 | 0.080 | 0.076 | | |
| Step 5: Interaction Term | | | | | |
| *"get own way"* x grade | 0.005 | 0.049 | 0.188 | 0.421*** | 0.005 |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 7

*Hierarchical Regression Analyses Predicting Children's Ratings for the "get own way, look strong" Goal for Happy Cues in Reciprocated Friend Pairs*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 1: Children's Demographics | | | | | |
| Gender | 0.005 | 0.172 | 0.018 | 0.306*** | 0.093*** |
| Race 1 | -1.296 | 0.340 | -0.391*** | | |
| Race 2 | -0.810 | 0.406 | -0.204* | | |
| Grade | -0.006 | 0.116 | -0.080 | | |
| Step 2: Children's Sociometric | | | | | |
| Acceptance rating | -0.007 | 0.131 | -0.048 | 0.371*** | 0.044* |
| Aggression | 0.243 | 0.123 | 0.160* | | |
| Shyness | -0.009 | 0.087 | -0.067 | | |
| Gets along | -0.002 | 0.084 | -0.017 | | |
| Step 3: Friend's Goal Ratings | | | | | |
| Ratings for *"get own way, look strong"* for happy | 0.195 | 0.146 | 0.176 | 0.402*** | 0.024** |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 7: *Continued*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 4: Friend's Demographics and Sociometric | | | | | |
| Race 1 | 0.247 | 0.360 | 0.076 | 0.440*** | 0.032 |
| Race 2 | 0.577 | 0.423 | 0.153 | | |
| Acceptance rating | -0.270 | 0.122 | -0.190* | | |
| Aggression | -0.181 | 0.134 | -0.114 | | |
| Shyness | -0.001 | 0.094 | -0.008 | | |
| Gets along | 0.105 | 0.084 | 0.088 | | |
| Step 5: Interaction Term | | | | | |
| *"get own way"* when happy x grade | 0.000 | 0.050 | -0.018 | 0.440*** | 0.000 |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 8

*Hierarchical Regression Analyses Predicting Children's Ratings for the "get own way, look strong" Goal for Sad Cues in Reciprocated Friend Pairs*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 1: Children's Demographics | | | | | |
| Gender | 0.008 | 0.180 | 0.030 | 0.286*** | 0.082*** |
| Race 1 | -1.219 | 0.355 | -0.359*** | | |
| Race 2 | -1.062 | 0.424 | -0.261** | | |
| Grade | -0.307 | 0.117 | -0.371** | | |
| Step 2: Children's Sociometric | | | | | |
| Acceptance rating | -0.004 | 0.135 | -0.030 | 0.325** | 0.024 |
| Aggression | 0.176 | 0.128 | 0.113 | | |
| Shyness | -0.005 | 0.091 | -0.036 | | |
| Gets along | -0.002 | 0.088 | -0.015 | | |
| Step 3: Friend's Goal Ratings | | | | | |
| Ratings for *"get own way, look strong"* for sad | -0.008 | 0.137 | -0.069 | 0.338** | 0.009 |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 8: *Continued*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 4: Friend's Demographics and Sociometric | | | | | |
| Race 1 | 0.002 | 0.376 | 0.006 | 0.385** | 0.034 |
| Race 2 | 0.006 | 0.441 | 0.016 | | |
| Acceptance rating | -0.269 | 0.126 | -0.185* | | |
| Aggression | -0.196 | 0.140 | -0.121 | | |
| Shyness | -0.138 | 0.098 | -0.098 | | |
| Gets along | 0.009 | 0.088 | 0.074 | | |
| Step 5: Interaction Term | | | | | |
| *"get own way"* when sad x grade | 0.009 | 0.050 | 0.284 | 0.401** | 0.013 |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 9

*Hierarchical Regression Analyses Predicting Children's Ratings for the "get along and be friends" Goal for Happy Cues in Reciprocated Friend Pairs*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 1: Children's Demographics | | | | | |
| Gender | 0.105 | 0.167 | 0.048 | 0.090 | 0.008 |
| Race 1 | -0.154 | 0.325 | -0.052 | | |
| Race 2 | 0.000 | 0.388 | 0.001 | | |
| Grade | 0.292 | 0.183 | 0.407 | | |
| Step 2: Children's Sociometric | | | | | |
| Acceptance rating | 0.110 | 0.124 | 0.087 | 0.111 | 0.004 |
| Aggression | -0.003 | 0.117 | -0.021 | | |
| Shyness | -0.003 | 0.085 | -0.025 | | |
| Gets along | -0.003 | 0.082 | -0.003 | | |
| Step 3: Friend's Goal Ratings | | | | | |
| Ratings for *"get along and be friends"* for happy | 0.352 | 0.148 | 0.371* | 0.162 | 0.014 |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 9: *Continued*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 4: Friend's Demographics and Sociometric | | | | | |
| Race 1 | 0.152 | 0.341 | 0.053 | 0.184 | 0.007 |
| Race 2 | 0.145 | 0.407 | 0.043 | | |
| Acceptance rating | -0.009 | 0.116 | -0.072 | | |
| Aggression | -0.007 | 0.129 | -0.052 | | |
| Shyness | 0.003 | 0.090 | 0.021 | | |
| Gets along | -0.002 | 0.081 | -0.016 | | |
| Step 5: Interaction Term | | | | | |
| *"be friends"* when happy x grade | -0.008 | 0.045 | -0.505 | 0.220 | 0.015 |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 10

*Hierarchical Regression Analyses Predicting Children's Ratings for the "get along and be friends" Goal for Angry Cues in Reciprocated Friend Pairs*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 1: Children's Demographics | | | | | |
| Gender | 0.004 | 0.177 | 0.015 | 0.121 | 0.015 |
| Race 1 | 0.002 | 0.348 | 0.006 | | |
| Race 2 | 0.003 | 0.415 | 0.007 | | |
| Grade | 0.265 | 0.185 | 0.334 | | |
| Step 2: Children's Sociometric | | | | | |
| Acceptance rating | 0.129 | 0.133 | 0.092 | 0.208 | 0.029 |
| Aggression | -0.187 | 0.125 | -0.126 | | |
| Shyness | 0.004 | 0.091 | 0.032 | | |
| Gets along | 0.004 | 0.087 | 0.033 | | |
| Step 3: Friend's Goal Ratings | | | | | |
| Ratings for *"get along and be friends"* for angry | 0.319 | 0.155 | 0.308* | 0.227 | 0.008 |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 10: *Continued*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 4: Friend's Demographics and Sociometric | | | | | |
| Race 1 | 0.103 | 0.364 | 0.033 | 0.308 | 0.043 |
| Race 2 | -0.004 | 0.435 | -0.001 | | |
| Acceptance rating | -0.154 | 0.124 | -0.111 | | |
| Aggression | -0.355 | 0.138 | -0.229** | | |
| Shyness | -0.008 | 0.097 | -0.062 | | |
| Gets along | -0.139 | 0.086 | -0.119 | | |
| Step 5: Interaction Term | | | | | |
| *"be friends"* when angry x grade | -0.008 | 0.047 | -0.445 | 0.327 | 0.012 |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 11

*Hierarchical Regression Analyses Predicting Children's Ratings for the "get along and be friends" Goal for Sad Cues in Reciprocated Friend Pairs*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 1: Children's Demographics | | | | | |
| Gender | 0.174 | 0.157 | 0.081 | 0.161 | 0.026 |
| Race 1 | 0.218 | 0.308 | 0.076 | | |
| Race 2 | 0.481 | 0.368 | 0.140 | | |
| Grade | 0.432 | 0.176 | 0.615** | | |
| Step 2: Children's Sociometric | | | | | |
| Acceptance rating | 0.004 | 0.117 | 0.034 | 0.193 | 0.011 |
| Aggression | -0.007 | 0.111 | -0.050 | | |
| Shyness | 0.000 | 0.081 | 0.002 | | |
| Gets along | 0.002 | 0.077 | 0.021 | | |
| Step 3: Friend's Goal Ratings | | | | | |
| Ratings for *"get along and be friends"* for sad | 0.466 | 0.136 | 0.490*** | 0.257 | 0.029** |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 11: *Continued*

| Step | B | Std. Error | Beta | R | $\Delta R^2$ |
|---|---|---|---|---|---|
| Step 4: Friend's Demographics and Sociometric | | | | | |
| Race 1 | 0.149 | 0.323 | 0.053 | 0.278 | 0.011 |
| Race 2 | 0.152 | 0.388 | 0.047 | | |
| Acceptance rating | 0.007 | 0.110 | 0.054 | | |
| Aggression | -0.009 | 0.122 | -0.068 | | |
| Shyness | -0.004 | 0.086 | -0.030 | | |
| Gets along | -0.005 | 0.076 | -0.053 | | |
| Step 5: Interaction Term | | | | | |
| *"be friends"* when sad x grade | -0.111 | 0.044 | -0.728** | 0.324 | 0.027** |

* $p < .05$; ** $p < .01$; *** $p < .001$